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Educational Theory....

FROM A PHILOSOPHY OF MAN: REFLECTIONS ON INTELLIGENCE AS A DYADIC FUNCTION

DEMOCRACY AND DEMOCRATIC VALUES: THEIR STATUS IN EDUCATIONAL THEORY

THE END OF AN EDUCATIONAL EPOCH: WHAT NEXT?

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THE END OF AN EDUCATIONAL EPOCH: WHAT NEXT?

BY FRANK C. WEGENER

PART I

MY TEXT OR THESIS IS ESSENTIALLY AS FOLLOWS: WE HAVE COME TO THE END OF AN EDUCATIONAL EPOCH AND ARE NOW FACING THE PROBLEM OF DISCOVERING NEW EDUCATIONAL LEADERSHIP WITH A COMPLETELY RECONSTRUCTED PHILOSOPHY OF EDUCATION. We are in need of a new philosophy of education which represents a higher synthesis than that achieved by any of the historical or even contemporary philosophies of education. The concluding epoch might well be called the pragmatic-progressive educational epoch epitomized largely by the educational philosophy of John Dewey and his followers and interpretors in educational and social theory and practice. Term it "pragmatic" because of the predominantly influential philosophical movement which expressed itself in education in many forms whether called "progressivism," "functionalism," or "instrumentalism." Call it "progressive" because of the predominant role played by progressive education in its rise in the 1920's and early 30's and its demise and decline in the later 30's and following decades. We realize that there are many other "isms" involved than "progressivism" and "conservativism"—but we use the latter terms because of their decided influence on the educational events and developments of these decades. This educational epoch was marked by the rise of the new education and its reaction against 19th Century conceptions of formal discipline, faculty psychology, idealistic philosophies of education with metaphysical bases, and classical conceptions of education. The new education was marked by its devotion to scientific foundations of education in place of the former metaphysical foundations, by the application of scientific method, by emphasis upon psychological, sociological, and political, bases for educational theory and practice. The sharp conflict between conservative and progressive theories marked the epoch. The pragmatic-progressive star set about 1938; strong reactions of conservativism in the form of essentialism, classicism, occurred in the 30's and 40's. By the 1950's

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the battle had reached a new stage; the new epoch was underway; the death of John Dewey in 1952 marked the end of an educational epoch; progressives and conservatives in their stale-mate stood in the middle of the road where their battles and resulting compromises had left them. Progressives spoke of "conservative-progressivism" and conservatives spoke of "dynamic-conservativism." Both had become eclectic; both were in need of philosophical leadership. Both wondered, "What next?"

In speaking of the end of the pragmatic-progressive educational epoch I do not mean to use these designations as derogatory or in a tone of disparagement. We are all aware of the fact that the controversies which have centered about these movements during recent decades have made these loaded terms to say the least. The contributions of this movement have been profound in their influence upon American education and culture. In my opinion the influences have been both positive and negative in their effects. Any wholesale indictment of the pragmatic-progressive movement would seem to me to be unfair and indefensible. The issues are much too complex to be solved in an "either-or" indictment or acceptance of progressivism or conservativism, pro-pragmatism or anti-pragmatism.

Synopsis of the epoch. I am using the term "epoch" here in the sense of a distinct period of time being characterized by a memorable series of events which mark definite developments during that period. As a convenient approximation I should equate this epoch with the first half of the 20th Century, although it could be argued cogently that the movement more accurately began in the 1890's and that the star of pragmatism and progressivism had set for this epoch in the late 1930's.

John Dewey's lifetime from 1859 to 1952 overlaps significantly with the educational epoch under discussion. He was born in the year that Darwin's *Origin of Species* was published. His youth and formative period of training and experience academically came during the 70's and 80's during the violent controversies of the latter part of the 19th Century. Dewey absorbed and gradually blended into his own thinking the diverse influences of such philosophers, scientists, and educators as Rousseau, Pestalozzi, Froebel, Herbart, G. Stanley Hall, Darwin, Kant, Hegel, James, Peirce, George S. Morris, and many others. We see in retrospect that although Dewey was strongly attracted to the current idealism of the 1880's, an influence which he never completely shook off, his period of formative change occurred between 1890 and 1904—particularly in respect to his foundations of educational theory.

He stands out as the central figure of this educational epoch because of his exemplification of its pragmatic, experimental, naturalistic, and scientific outlooks. Also, he was one of the very few general philosophers who, instead of criticizing education from the outside, actually applied his thinking to the fundamental problems of educational theory in an attempt to do something about them. It is perhaps an oversimplification to say that Mr. Dewey epitomized the diverse educational events and movements of the 20th Century; however, there is much truth in this statement. Other philosophers have written essays on education to be sure. Kant, James, and Peirce, for example, have had some things to say about education, incidentally; but, there are few, especially in the 20th Century, who have applied themselves consistently to the task of working through a com-

plete and systematic philosophy of education. With a few notable exceptions it is difficult to find any attempts to work out such complete philosophies of education as achieved by Dewey.

In looking back at the development of educational theory, we recall that the predominance of the idealistic philosophy of Hegel as expressed in the educational theory of Froebel had some influence in this country in the 1870's and 1880's. We recall also the Hegelian influence in this country as expressed by William T. Harris and H. Brokemeyer in what was called the St. Louis Movement. As commissioner of education and founder of the Journal of Speculative Philosophy, W. T. Harris exerted considerable idealistic influence on educational theory. Dewey, too, although partially concerned with Kant and Hegel, came to oppose this theory of education. We are reminded also that the De Garmo brothers did much to revive the educational philosophy of Johann Herbart during the 1890's. Herbart's conceptions of "the five formal steps in teaching," "the circle of thought," his psychology of "the apperceptive mass," his educational theory of "the recapitulation of cultural epochs," and his "doctrine of interest" were as familar during the 90's in educational circles as the Dewey doctrines have been in recent decades.

Educational philosophies in the 19th Century were for the most part metaphysically grounded. Even Dewey's theories of the 1880's were likewise metaphysically grounded, but during the 1890's came a distinct change. Dewey turned to the emerging biological, sociological, and psychological sciences and embraced the evolutionary conception of the bio-social nature of human intelligence. Between 1890 and 1904 he had shifted from a metaphysical base to a scientific base for his ethics, psychology, social theory, and educational theory.

During the 1890's Dewey took several significant steps toward the implementation of the new epoch in education. It will be recalled that in 1894 Dewey went from the University of Michigan in the philosophy department to the University of Chicago to head philosophy and psychology. In 1896 he took charge of his now famous laboratory school where he experimented with his educational theories. It was also in 1896 that he was supposed to have given up "mentalism." In that year also he wrote his influential paper on "The Reflex Arc Concept in Psychology". In 1897 he wrote the short summary of his educational outlook, "My Pedagogic Creed". During this period he produced a number of shorter works in educational theory:

1896 "Interest and Effort as Related to Will"
1899 "The School and Society"
1900 "The Elementary School Record"
1902 "The Child and the Curriculum"

It was at the turn of the century that Thorndike, as well as Dewey and others, was conducting a direct attack on older theories of education, notably theories of "faculty psychology," "formal discipline," and "transfer of training." Professor William Bagley, educational conservative, said of this period of experimentation, "Edward Thorndike deliberately set up his psychological experiments to knock the theory of formal discipline into a cocked hat!" Apparently he had some doubts about the objectivity of the scientific movement in educational experimentation at this time.

Time does not permit my recounting of the many memorable events of this period. May I recall just a few of Dewey's writings which seem to highlight the developments of the pragmatic-progressive educational theory during this epoch. In 1910 Dewey wrote his very influential work, *How We Think*. Here he set forth his basic contention on how we learn through problem-solving. He condemned the two extremes of the schools of thought of "free self-expression" and "authoritative control." He advanced the "instrumental theory" as a means of mediating these extremes. In 1913 his *Interest and Effort* appeared, which was to have such influence on progressive thought. In 1916 Macmillan published his most powerful contribution and formulation of an educational philosophy, *Democracy and Education.* In 1919 the Progressive Education Association was formed and became the vehicle for implementation and advancement of many of Dewey's ideas for better or for worse in the 1920's. You will recall the stream of books that continued to pour from Dewey during this period: 1920, *Reconstruction in Philosophy*, 1922, *Human Nature and Conduct*, 1925, *Experience and Nature*, 1929, *The Quest for Certainty*, and *Sources of a Science of Education.*

Progressive education was now in full swing over the country. (By that I mean that it was being advanced in colleges and universities and tried in many cities over the nation; undoubtedly a very large percentage of the schools of the country were never dominated by Dewey's theories.)

The progressive educational revolution of the 20's resulted in a variety of reactions in the 1930's. The concept of the "child centered" school was challenged by other progressives who believed in the "community centered school." Professor George Counts presented his dramatic lectures in 1932 entitled: "Dare the schools build a new social order?" He criticized the type of progressive education of the 20's which was catering to the "individualism" of a class society and neglecting the real social functions of democratic education. We recall the manner in which Professor I. Kandel, Conservative educator, accepted the progressive challenge in his reply, "Can the schools build a new social order?" Kandel of course maintained his "reflector theory," that the schools themselves should only reflect the desires of the society they serve.

We recall the many ramifications of this period of reaction and counter revolution which were all a part of this educational epoch and foretelling its end. If time permitted I should like to discuss with you such events as: the ramification of progressivism itself into what Peter Orata has well termed "the fifty-seven varieties of progressivism,"—The rise of the Essentialists with their Essentialist Manifesto in 1937; the many protests of laymen and citizens throughout the country, especially in cities where the schools had seemingly gone overboard on progressive education; even the original leaders of the educational philosophy (or philosophies) of progressivism including Professors John Dewey, Boyd Bode, Harold Rugg, and others were moved to make sharp criticisms of the ways in which the pragmatic philosophy had been misinterpreted and misapplied in educational theory and practice.

As John Wahlquist says, "As a matter of fact, Professors Dewey, Bode, and Hart and other naturalistic philosophers have been very critical of certain manifestations of progressive education for several years. As early as 1930, they contributed to a symposium on 'New Education Ten Years After.' At that time the following criticisms were brought forward: (1) the new education had no

consistent and defensible program, (2) there was too much freedom given to pupils, (3) the work in the school lacked system and organization, (4) the relation of so-called subject matter to industrial society was not made clear, (5) the school was child-centered, and, as a consequence, the pupils learned little or nothing to enable them to make adjustments to the social order on the outside, (6) the teachers in the new school became an enormous superfluity, and (7) suppression of teacher activity did not result in the liberation of pupil initiative and orginality."[1] Again in 1938 these same professors (leaders of the new educational philosophy) Dewey, Bode, and Rugg criticized the attempts of certain progressive educators in the field. "(1) Progressive education has no distinctive philosophy of its own, the consequence being that its method consists mainly of not doing what is done in 'traditional schools'. . . . Progressive education's identification of freedom with mere absence of external restraint results in the pupils mistaking freedom for license—a free-for-all philosophy for a free-for-none education. . . . The absence of a defensible and significant philosophy of experience as a basis of a sound and consistent philosophy of education results in activity for its own sake and accounts for the lack of continuity of experience in the pupils and the reconstruction of such experience by them in the interest of improving the quality of their subsequent experiences."[2]

Dewey himself wrote *Experience and Education* in 1938 in order to clarify the misunderstanding of his philosophy. He delivered such a criticism and rebuke to the educators in the Progressive Education Association, that in my opinion that is one reason they changed their name to the American Education Fellowship. "Progressivism" was beginning to become a bad name in education. The tide was beginning to turn in the conservative reaction. Dewey himself warned of the return to the older education unless there was a real housecleaning in the progressive household. The end of the epoch was near.

The events of this epoch are too many to be recounted here. Much more remains to be said about the other events of the last two and a half decades. The counter revolution in educational philosophy led by classicists and advocates of the return to the Great Books and the Great Tradition in the 30's and 40's is well remembered. The sharp criticisms of scientism, progressivism, utilitarianism, commercialism, professionalism, sociologism, and pragmatism by such classicists, humanists, and devotees of the liberal arts tradition as Hutchins, Adler, Meiklejohn, Forester, Shorey, Flexner, Bestor, Stringfellow Barr, Scott Buchanan, and many others, marked the reactions against progressivism on the level of higher learning. The echoes of "It Happened in Pasadena" are still ringing in our ears. The more recent controversies between Arthur Bestor, University of Illinois, concerning his "Educational Wastelands" and other articles and books in his attacks upon professional pedagogy, and the stinging replies still fill our journals. Who has escaped the most recent flareup in one way or another occasioned by Rudolph Flesch's book, "Why Johnny Can't Read." These are some of the controversies being carried over from the passing epoch by those who do not realize that we are already embarked upon the exploratory state of a new era in educational theory and practice.

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[1]John T. Wahlquist, *The Philosophy of American Education*, (New York: The Ronald Press, Copyright, 1942), pp. 102–03. Reprinted with permission of the publisher and writer.

[2]Wahlquist, *Ibid.*, pp. 103–04. In turn quoted from a summary by Orata, Pedro J., "Progressives Look at Progressive Education," *Educational Administration and Supervision*, 24: 570–580 (November, 1938). Reprinted here with permissions of Ronald Press Company and the writers.

PART II

The first part of this paper has been retrospective; the second part is prospective and prophetic, which is admittedly more difficult and speculative. In such prophecies we should no doubt differ greatly in our individual prognostications. Permit me to make some observations in respect to this question, "What next, on the educational front?"

Philosophical change. Educational theories and practices and philosophies of education reflect underlying philosophical changes in climate and viewpoint. In this reflection there is a notable educational lag of twenty to thirty years in my opinion. I believe that the present, new epoch which is already burgeoning forth, represents a moving out of an era which was marked by the rise of pragmatic-progressive philosophies of education and social theory, into an era which will be characterized philosophically by higher syntheses based upon the principles of an organic philosophy of life and reality. Whereas the past educational epoch was dominated by the pros and cons generated largely by John Dewey's naturalistic-instrumental viewpoint, the new educational epoch will be dominated by the pros and cons occasioned by an analysis of the educational and social implications of such a philosophy as that of the late Alfred North Whitehead, the philosophy of organism. Although Whitehead's general philosophy was substantially set forth in his work, *Process and Reality*, in 1929, and considerable furor created in philosophical circles in the 1930's, the far-reaching philosophical and educational ramifications have yet to be made known to our educational leaders. It is such a philosophy that I believe will largely answer the question "What next?" in educational thought.

Currently there are nearly a dozen competing and conflicting philosophies of education, at least in their embryonic forms. The historically established doctrines of educational theory based upon philosophies of realism, idealism, pragmatism, naturalism, supernaturalism, and Neo-Thomism are still with us. Some of the newer expressions of philosophies of education include existentialism, semanticism, and logical empiricism. The 54th Yearbook of the National Society for the Study of Education, Part I, *Philosophies and Education*, 1955, presents an array of nine different philosophies of education. This diversity of educational philosophies emphasizes the problem facing educational leaders of where to turn for philosophical leadership in the face of a new epoch and in the recognition of the fact that the generation of pragmatic leadership epitomized by John Dewey is dead. Thus in an atomic age where the demands upon education are virtually those of survival there is at present a genuine state of confusion as to the location and interpretation of an adequate philosophy of education.

Progressive educational philosophers are admittedly in a quandry. Some are in the process of turning back to a re-study of the philosophy of Charles S. Peirce. Others are trying to make their own reconstructions and extensions of John Dewey's philosophy. Still others are turning to avenues of existentialism, linguistics, or semantics for their solutions. Conservatives are fairly well committed to historically established philosophies which they seek to reconstruct and moderate. By and large educators appear to be very eclectic both in their philosophical beliefs and practices. That is to say that compromises and partial concessions have been worked out at the operational level. Yet despite the plurality of embryonic expressions of educational philosophies, there virtually are no phi-

losophies of education of the 20th Century which have been worked out systematically throughout the gamut of philosophical and educational problems to the degree accomplished by the works of John Dewey. It is precisely this task which faces the educational philosophers in the challenge of this new education epoch.

A higher synthesis. The new educational epoch will be characterized by the achievement of a higher synthesis of the conflicting elements and doctrines than heretofore achieved. It is perennially the task of the philosopher to reconstruct thought in such a way as to overcome paradoxes and contradictions. Dewey, for example, developed a coherent philosophy of education by his adaptation of the Hegelian triadic pattern. His constant endeavor was to achieve a unity out of familiar dichotomies of body and mind, interest and effort, and individual and society. But the new era demands another reconstruction of the familiar "either-or" choices between general and special education, cultural and vocational education, theoretical and practical, formal and functional, logical or psychological, progressive or conservative education. We are in serious need of a higher synthesis of these older conflicts—a synthesis in which the elements of diversity are not sacrificed for the achievement of the principle of unity. What is needed in the new era is the recognition and formulation of the principle of bipolarity, or the "union of opposites" whereby both of the valid elements of unity and diversity are preserved. Thus, organically, we should recognize the bipolar relations of theory and practice, the logical and psychological continuities, and the like, in the educational process. It is imperative that we grasp the organic disjunctiveness as well as the conjunctiveness of these relations.

Thus out of the bitter conflict between the "either-or" choice of educational progressivism or educational conservativism which characterized the previous educational epoch we should move rapidly into a higher synthesis of the valid elements of these doctrines. I believe this can be done, not merely at the level of expediency and eclecticism, but at the philosophical level where the elements can be unified through organic principles of relatedness and bipolarity.

Many of the older issues and their respective solutions have become obsolete in the sense that through philosophical progress these problems and issues have been reformulated at a level of higher synthesis. The familiar and equivocal issues of American philosophy of the last seventy-five years or more, such as naturalism versus supernaturalism, realism versus idealism, relativism versus absolutism, and even progressivism versus conservativism are no longer the clear-cut issues they once were. The lines of demarcation are now much more subtle and redefined. The continuing dialectic with the inevitable modifications of both sides of the arguments have resulted in more refined issues.

Views of Charles Harthshorne. In his recent book, *Reality as Social Process*, Charles Hartshorne, University of Chicago, elaborates this need for a higher synthesis beyond the older issues. "If we have made basic advances in intellectual method, and I think we have, in the last century or so, this should affect not merely our answers but our questions, to such an extent that the old dichotomies should be viewed with suspicion. The content of 'nature', for instance, is not so obvious that the meaning of a contrasting term 'supernature', poses only the problem of acceptance or rejection. Again, that many meanings of 'God' are intellectually untenable does not prove that all conceptions of a supreme reality

worthy of worship must be so. It is limiting to look backward to the old fights with the hope of discerning the truth as a pure monopoly on one contender or the other. It is safer to employ what has been termed the 'double rejection,' by which we are set free to look forward to the new alternatives that our resources, the accumulation of the ages, open to us. It should be our daring aspiration to rise above both sides of the old sterile disputes."[3]

It is apparent that this is our great need in the field of education, in the broadest sense of the word "education," as we move into a new epoch. The issues and solutions of the previous epoch must be re-formulated and reconstructed in such a way that we can arrive at a higher synthesis in terms of an educational philosophy. It is my belief that such reconstructions in the new educational epoch will be characterized by the flowering of educational, social, and psychological theories rooted in a philosophy of organism.

Thus it appears to this observer that we shall move from a period of educational theory dominated by pragmatic, naturalistic, and positivistic philosophies to an era in which there is an expansion and amplification of the philosophy of organism as put forth by Alexander, Whitehead, Bergson, Hartshorne, and others of organic persuasion. The movement will then be from educational theories which have been "child-centered," "community-centered," "group-centered," "God-centered," "culture-centered," to an educational philosophy grounded in a general philosophy which is concerned with man's relation to process and reality, beyond the limitations and parsimonies of philosophies based upon older dichtomies and bifurcations.

PART III

The Organic Philosophy of Education. It has been my objective to work out a systematic philosophy of education. This educational philosophy is a completely reconstructed one based upon principles of a philosophy of organism.[4]

It represents an effort to accomplish concretely the task which I have outlined to you in broad terms as facing the educational philosophers at the present time. Admittedly it is a very comprehensive undertaking; yet it is a task which has to be done.

Toward an organic theory of school and society. Time does not permit an exposition of even the outlines of this educational philosophy. Yet, I should like to express one aspect briefly, namely the efforts to work toward an organic theory of school and society, as an example of our efforts to satisfy the previous admonitions concerning the need for a higher synthesis.

Progressive philosophies of education tend to believe that the schools should lead rather than to follow society. This pragmatic-progressive doctrine follows in part from their basic contention that knowledge is instrumental to action. Pragmatism according to William P. Montague is futuristic because of its conception of the nature of intelligence and knowledge. John Dewey himself said, "Education may be conceived either retrospectively or prospectively. That is to

[3]Charles Hartshorne, *Reality as Social Process*, (The Free Press, Glencoe, Illinois, Copyright, 1953), p. 17. Reprinted with permission of the Free Press Publishers.

[4]Frank C. Wegener, *The Organic Philosophy of Education*, (Dubuque, Iowa: The Wm. C. Brown Company, 1957, Copyright By Frank C. Wegener, 1957).

say it may be treated as a process of accomodating the future to the past, or as an utilization of the past for a resource in a developing future."[5]

When we combine this instrumental conception of the educational process with Dewey's other conceptions of education as the means of social process, we see that the basic notion of bio-social intelligence of man carries with it the implied notion that the school and its concerns must be oriented in progressive terms of social reconstruction.

Out of Dewey's philosophy has developed the viewpoint of the "social reconstructionist" which may be summarized as follows:

"In summary the social-reconstruction position may be defined as that curriculum theory which unites in one coherent pattern of thought the following propositions:

(1) The belief that the moral authority of the teacher in our society ultimately rests upon the American democratic tradition regarded as a growing and developing ideal rather than as a fixed and final dogma.

(2) The conviction that the ends of education are essentially social ends, coupled with the further conviction that, to the extent that society is democratic throughout, opposition between the social purposes of education and the needs and interests of children will be reduced to a minimum.

(3) The contention that the basic social purpose of education cannot be comprehended simply as the perpetuation of the *status quo*. The purpose must include, as its central focus, that continuous reconstruction of ideas and institutions required to make society a more and more perfect embodiment of the democratic way of life under the conditions prescribed by historical imperatives.

(4) The thesis that the core of the curriculum of the public schools should consist of a careful study of the significant social problems now confronting the people, ordered and arranged with due regard for the abilities, interest and needs of children, and managed in such a way as will best develop the capacity of the learner to think, judge, and act intelligently."[6]

According to the conservative viewpoint schools cannot build a new social order in the sense of a socio-economic-political order which is something different from what society itself desires. The school can only build that social order desired by the society as a whole. Thus the school is a reflector of social change but it is not the initiator of these changes in the social order. The schools should conserve the cultural heritage and should modify that heritage in terms of cultural change only in as much as the school reflects the demands and desires of society for needed changes.

Thus progressive and conservative philosophies of education reflect underlying philosophies and their respective mentalities. Philosophically, conservatives possess a mentality grounded in beliefs in elements of permanence, stability, order, eternal values—in short in the metaphysical bases of reality. By the same token the progressive mentality is grounded in predominant beliefs in change, reform,

[5]John Dewey, *Democracy and Education*, (New York: The Macmillan Company, Copyright, 1916), pp. 92–93. Reprinted with permission of the publishers.

[6]Originally from B. Othanel Smith, William O. Stanley, and J. Harlan Shores, *Fundamentals of Curriculum Development*, (Yonkers, New York: World Book Company Publishers, Copyright, 1950), pp. 186–192, 726–727. Used by permission of the publishers.

progress, novelty and in the relativity of values. This position is nicely stated by Professor Arthur Schlesinger, Jr.: "I am a liberal because I think our society must be made better, and because I think we can in the future, as we have in the past, work out practical ways of bringing about improvement. In so far as I am an idealist, I acknowledge in myself an uneasy conscience which keeps me from sleeping in perfect tranquility while others suffer or starve or are denied opportunities for self-fulfillment. In so far as I am a realist, I am sure that the only way to forestall eventual social violence is to provide the energetic elements in society opportunities proportionate to vigor and talent within the existing social framework. Both idealism and realism—both conscience and calculation—would seem to demand a recognition of the indispensability of reasoned change and thus to commend liberalism over conservativism."[7]

The progressive mentality in education as expressed in the educational philosophies of such men as John Dewey, William Kilpatrick, John Childs, Bruce Raup, and now Theodore Brameld with his "Reconstructionism," has emphasized and continues to stress the primary role of the schools in the active reconstruction of the social order. The orderly teaching of subject matters and the systematic transmission of the cultural heritage are *subordinated* to the reconstructive function in the context of the pragmatic subordination of the knowing process to that of instrumental action and behavior. This view alone, in my opinion, results in an unfortunate one-sidedness in educational theory and practice. The conservative mentality on the other hand is devoted to concepts of permanence, perennial problems and values, stability, and conservation of the hard won gains of centuries of humanity's accumulated experiences and cultural accretions. Mr. Russell Kirk who has written in defense of the Conservative Viewpoint states the position quite succinctly as follows: "The conservative, on the contrary, thinks of society as what Burke called the great mysterious incorporation of the human race, held together by tradition and custom and immemorial usage, a living spirit; and he thinks that happiness comes from duty done and from an understanding of the vanity of human wishes."[8] There is then a very profound sense in which the conservative is a believer in *tradition*; whereas the term 'tradition' to the progressive is often a word of opprobrium and means backwardness and perverseness; the conservative sees in it the residue of the great human experiences and modes of living inherited from the past. Expressed in terms of educational philosophies the conservative mentality is devoted to concepts of traditional education, to formal education, to an education whose function is found by and large in the systematic transmission of the cultural heritage. Despite the profound validities of this mentality, and its necessity within the totality of culture, I find the conservative mentality *per se* one-sided and therefore inadequate as the basis for a philosophy of education for the burgeoning epoch before us.

It is patent that the driving forces of these two great mentalities—the progressive and conservative must be nurtured within the processes of a dynamic culture. Nevertheless, I contend that an adequate philosophy of education cannot be based upon either one of these two mentalities *per se*. The functions of these two mentalities must be embraced within the totality of an organic phi-

[7]From Russell Kirk and Arthur Schlesinger, Jr., "Conservative vs. Liberal—A Debate," *New York Times*, March 4, 1956, New York Times Magazine Section, pages 11, and 58–63.

[8]Kirk, *Ibid.*, p. 11.

losophy of education. As Emerson said, "Each is a great half, but an impossible whole. Each exposes the abuses of the other, but in a true society, in a true man, both must combine."[9]

Progressive and conservative educators may object: "But we too believe that education must both transmit the cultural heritage and reconstruct the social order"! My answer is this: Is there no real difference between progressives and conservatives in their philosophies of education in general and their theories of school and society in particular? Are the differences only verbalistic and nominal, or are there real ideological and philosophical differences? I say there are real differences in viewpoints. Progressives superordinate change, reform, and reconstructive action over systematic transmission of the cultural heritage; they subordinate the knowledge of the past to the instrumental actions of the present. In a word they are pragmatic in orientation. Conservatives, by the same token, superordinate knowledge of the past over immediate action and reconstruction, while subordinating or neglecting pragmatic action in relation to the total processes of schooling. Each in turn commits the error of monopolarity or one-sidedness because of its given premises.

The Organic Philosophy of Education seeks to coordinate the respective functions partially held by progressive and conservative viewpoints within the totality of the philosophy of organism. Such an educational philosophy in my opinion serves a democratic society more equitably than either of the partisan views of progressivism or conservativism *per se*, for it seeks to rise above the limited concepts and beliefs of each of these generic viewpoints.

Such an organic viewpoint is not held merely for the sake of expediency at the operational level. It is precisely here that we realize the necessity of grounding a philosophy of education in a thoroughgoing philosophy of reality, knowledge, and value. It is to the merit of Whitehead's philosophy of organism that he recognizes the pervading existence of the great ideal opposites which characterize the world processes, such as the bipolarities of flux and permanence, greatness and triviality, freedom and necessity, joy and sorrow, good and evil, disjunction and conjunction, and God and the world. In our recent formulation of an "organic theory of school and society," Dr. Clyde V. Martin and I have set forth the following bipolar co-ordinates: "(1) the conservative-progressive functions of education, (2) the creative factors of permanence and novelty, (3) the 'settled past' and the 'creative advance,' (4) the principles of unity and diversity, stability and reconstruction, being and becoming, and (5) the Jeffersonian-Jacksonian principles, the structural-functional principles, and the principles of equilibrium-disequilibrium."[10]

Thus I should argue that these principles of an organic educational philosophy in terms of co-ordination must replace the antagonistic claims of progressives and conservatives and their respective errors of one-sidedness. In the coming educational era the organic conception of bipolar "unities of opposites" as achieved in the educational process must replace the monopolarities of progressive and conservative educational philosophies of the past epoch.

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[9]Kirk, *Ibid.*, p. 58.

[10]Frank C. Wegener, and Clyde V. Martin, *School and Society*, a manuscript in progress containing a thoroughgoing analysis of progressive, conservative, and organic theories of school and society. 1953–1957.

FROM A PHILOSOPHY OF MAN: REFLECTIONS ON INTELLIGENCE AS A DYADIC FUNCTION

BY JOHN W. DONOHUE, S.J.

I

ANYONE WHO PROPOSES TO SELECT A THEME FROM PHILOSOPHICAL ANTHROPOLOGY AND TO SUMMARIZE BOTH HIS SUBSTANTIVE POSITION ON THE QUESTION AND SOME OF ITS IMPLICATIONS FOR EDUCATION is likely to find that he must navigate over fairly choppy waters. There is, for instance, a certain difficulty affecting the choice of a procedure in view of current styles and standards in philosophical discourse. Most academic philosophers today do not share the enthusiasm of philosophers of education for the brisk survey of a wide landscape. They prefer to level the sights of a highly sophisticated erudition on circumscribed problems of a quite technical, even largely linguistic nature. Indeed a logical analyst would doubtless be scandalized by a topic so spacious as the present one. In this sort of climate a brief paper on the educational resonances of a particular philosophy of man must choose between alternative paths. It may elect to examine thoroughly a minute patch of the canvas and thereby run the risk of producing a statement which will not seem especially relevant or it may attempt a glancing and superficial résumé of a theme both more sizable and more pertinent. I have chosen this latter course but with no notable *sang-froid.*

Moreover, an enterprise of this sort assumes, as do most essays in educational theory, that formal philosophy really counts for something in education and this is a conviction worth some examination. The assumption can be understood in two ways. Theoretically, I think, it is quite warranted. That is to say, philosophy is at least potentially significant for educational practice. Historically, however, it is not so clear that philosophers have actually constituted much of a makeweight so far as education is concerned. In any historic concretization of the educational enterprise we can distinguish two phases, not perfectly separated but interpenetrating and mutually influential. Dewey implied the distinction when he remarked in *Liberalism and Social Action* that the end-products of a total education (of which schooling is but one part) are "dominant habits of mind and character." Or as the older formula had it: intellectual and moral virtues. For convenience's sake we might call one of these two phases the *technical,* using the term loosely as a label for the whole process whereby through the acquisition of certain skills and information a young person becomes virtuoso enough to cooperate productively in some of the myriad roles of man's many communities. The other aspect is that guidance or moral phase which aims at helping this same young person become virtuous enough to fulfill these roles with consistent responsibility.

Now it does not seem that philosophers have, as a rule, been very influential in determining the character either of this technical or of this moral moment in historic educational practices. Thoughtful men have always realized what the

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social scientists have more recently detailed in showing us how the aims and content of the technical or academic phase of an education usually reflect and are decided in terms of the total way of life which the older people in a given society are handing on to their children. In this sense, any education is literally traditional although not necessarily conservative. For if a particular way of life places a premium upon conventional procedures and the *status quo*, that is what will be transmitted but if the adult generation esteems adventuresome or pragmatic qualities and encourages inventiveness and a restless zeal for improvement, that, too, will be communicated. But in any event, technical education in any culture seems to present itself as a chief instrument of social continuity and as such is shaped by the people's common way of life rather than by the philosopher's recommendations.

On the other hand, neither has that conceptualization of moral standards and ideals which structures the process of character education generally originated with the professional philosophers. Most frequently it has been the work either of the religious societal form whose precise function includes the provision of an ethical and finalistic interpretation of human experience or of social movements which have assumed something of the aura of a religion.

We must grant, of course, that those profound historic tremors which, from time to time, shake the consciousness of the human community are decisive for education and if a philosophy catches and articulates their note it will have a strong appeal. Thus, if you like, the passion for national self-determination may have found a rationalization in certain philosophies with a nationalistic strain. One thinks of Gentile's career in Italy, for instance, or of the way Hegelianism was employed at times in Germany. Even more striking has been the Marxist formulation of the widespread hunger not merely for bread but for social justice. Nevertheless, so far as education is concerned, it seems to me that we should count as the authentic source of primary influence in these cases, precisely those deep though unsystematized perceptions and feelings to which a whole era may vibrate and which have been more often awakened by the lives and teachings of heroes, by technical and scientific transformations, by new geographical discoveries or developments in arts and letters than by philosophers. Historic cultures, in short, do not generally seem to have taken the intellectualization of their educational practice from consciously philosophical sources.

These remarks must be hedged against misunderstanding. They are not intended to argue, for instance, that the sole or even the main function of a philosopher should be to conceptualize the consciousness of his age although surely all great philosophers achieve this to some extent. Nor would I maintain that the degree to which a philosophy colors educational aims and practices is the criterion of its truth. The philosophical quest, like the scientific quest and the artistic quest, has its own goals and a considerable job of transposition is needed before the relevant findings of this inquiry are in position to be operative in the concrete work of education. No doubt this job of transposition and formulation is the distinctive task of that mediating and interdisciplinary discipline *par excellence*, the philosophy of education. But even when it has been accomplished we cannot be sure that these philosophical deliverances actually will be operative. The most of men may choose to ignore them. At least, this is what the historic record suggests but your true philosopher might conclude that it only proves that the most of men are no more likely to be authentic savants than authentic saints.

II

The reservations above having been noted, we can go on to ask a particular question of the philosophy of Man. The question is this: What is the full register of human intelligence? Or, if speaking of intelligence seems to prejudge a philosophical issue, what is the full range of those activities commonly called intelligent and what are the implications of the evidence which in themselves they constitute? It will be understood, I hope, that when hereafter I speak of intelligence I use the conventional short-hand term which, translated, means "man in his intelligent activity." There is no intention of hypostatizing the mind; it is not reason that thinks but men who use their intelligences in manifold ways.

The present question can be focused by dramatizing it as a confrontation of the two most widely heard American educational theorists of the past half-century: John Dewey and Robert Maynard Hutchins. We may think of each of them as responding to our question with an answer which is two-fold, having an affirmative and a negative facet. Dewey would strongly affirm the value of pragmatic, problem-solving, instrumental intelligence. Together with this affirmation there would go the rejection as purely illusory of what Aristotle called the *nous theoretikos*, the power for a kind of thought whose truth has a criterion other than that of success in action. From Hutchins, on the other hand, we would get an affirmation of the value of the speculative activity of intelligence, that power which takes hold of real things by grasping their intelligible aspect. Together with this affirmation there would go, not so much a theoretical rejection of practical intelligence, as a neglect of it amounting to an effective dismissal. No doubt both our protagonists in certain places qualify those theses which elsewhere they systematically exaggerate for didactic purposes. Here, however, we are simply employing Dewey and Hutchins as symbols of polar positions on the scope of intelligence. Each of these theories has a worthwhile point of view and without subscribing to every detail of their individual analyses, one can readily applaud the affirmations of both. But I would, for my part, deplore their negations or exclusions. In both cases, it seems to me that a concentration on a particular insight has meant the formulation of a theory of intelligence which is so strongly monistic in bent as to quite impoverish the concrete phenomena and to cover rather than discover certain of its implications. For this reason, therefore, I find each of these interpretations insufficient as an answer to the question proposed. The theory to which, instead, I would myself adhere, maintains that human intelligence is pluralistic in its function and that the vital apprehension of valid knowledge is, in the concrete order, polymorphic. Intelligence, so to say, has more than one note and more than one key. Its register embraces both instrumental and contemplative approaches to reality and each of these is genuinely fruitful.

If we turn for a moment to the psychologist we will be reminded that our cognitive experience first presents itself to reflection as a marvellously rich, though confused, complex. It enfolds sensation and imagination each of them ministering to and neither of them identical with intelligence. It includes intuition, reasoning and memories as well as the making of hypotheses and systems. In the living person it takes on distinctive colorations from such factors as sex, age, habitat and individual history. It is often intertwined with a profound affective disposition which, as Rousselot pointed out, itself heightens perception and provides man

with a quasi-new "power of abstraction," a new formal object. Thus the optimist is stirred by and draws from all things their smiling aspect and the pessimist will say with Jaques in *As You Like It*: "I can suck melancholy out of a song as a weasel sucks eggs."[1] The psychologist himself may not be interested in analyzing this complex into its several factors for the sake of regrouping them thereafter in a synthesis. He may simply be content with delineating as accurately as possible the intellectual syndromes. It would seem defensible, however, for the philosopher to attempt such analyses so long as he makes his abstractions from actual experience and is not unmindful that, since the elements abstracted are never perfectly isolated in the concrete, the abstract formula is necessarily partial.

It is here proposed that one such analysis of our intellectual experiences confirms a celebrated thesis enunciated in the sixth book of the *Nicomachean Ethics*. According to that thesis the manifold expressions of human intelligent activity point to a fundamental division between two archetypical expressions of intelligence, the practical and the speculative, neither one of which can be reduced to the other. This does not mean a distinction between two minds but rather between two modes or manners of intelligent action. There is a practical valence of intelligence which shows itself in the arts and technics as well as in scientific experimentation and in the solving of not a few problems in human relationships. Moreover, the validation of all these ways-means or ends-means activities lies in their degree of actual success. But there is also another primary form of intelligent action for which it is nowadays somewhat hard to find a non-derogatory label since such terms as "speculative, theoretical, contemplative" are, in certain milieus at least, rather overcast. Let us call it, again for convenience's sake, the insightful or meditative intelligence—a prehensive power which can penetrate to a true, though not of course to an exhaustive understanding of things as they really are. When men think in this fashion they apprehend to comprehend and the knowledge generated may well be quite useful. Yet even if it were not, it would still be an immanent enrichment and a value or end in itself. The philosophical thinking, even of the strict experimentalist, involves refined expressions of this reflective function and it has its everyday actualizations in all those cases which indicate that often we do know more about nature than just its instrumental characteristics,

In a moment we shall consider some of those phenomena in a little detail. suggesting in a rudimentary way bits of the experiential evidence whose exigencies and hints are best accounted for by a theory of basic pluralism in the ways of knowing. I say best accounted for because while monistic explanations may be and have been given I must confess that they seem to me forced and inadequate. But first of all, by way of preamble, it might be wise to make clear just what questions are not under discussion at the present time.

It is not now, for instance, a question as to whether or not any knowledge exists at all. For the purposes of this paper the affirmative reply is assumed as inevitable if only because the contradictory proposition blows itself out of the water.[2] In the second place, there is no question here as to whether or not some of this knowledge is knowledge of a real world existing independently of the

[1]Pierre Rousselot, "Amour Spirituel et Synthèse Aperceptive," *Revue de Philosophie*, XVI (March, 1910), 225–240.

[2]See the succinct argument on this point in: Francis H. Parker, "Realistic Epistemology," in John Wild (ed.), *The Return to Reason* (Chicago: Henry Regnery Company, 1953), p. 152.

knower. Doubtless this issue, though rather obsessional in character, has been central in modern philosophy but since there must be limits to any paper I am here assuming the realist proposition which holds that there is some immediate knowledge of extra-mental reality. Parenthetically, it might be added that anyone who works with people would probably accept at least the existence of other human beings. If a hermit says he is a solipsist he may only be rated exotic but a teacher who would make the same claim might well appear oddly inconsistent. Finally, there is no concern at present to defend the non-physical or immaterial character of intellection although the writer is personally persuaded that a further analysis of either one of these two functions of intelligence, the practical or the insightful, will point to the non-materiality of their source.

The base from which our thesis on the dyadic function of intelligence is projected is, to give it a thumping title, that of a realistic historical personalism. Realistic because it is convinced that man-the-knower can escape the narrow world of the strict sense-empiricist without having recourse to the idealistic claim for knowing intelligible essences immediately, in themselves, as the proper object of human understanding. In the perspective adopted here it is maintained that all natural knowledge in some way takes its rise from experiences involving sensory awareness but that it can issue in something more than the reorganization of this material of sense experience since the intelligible reality of things can be grasped in and through that sensory impact. Secondly, this philosophy calls itself historical because it insists that the world men know is a world in forward process, a world moving and evolving and that man himself, as one Christian thinker has put it, "Is so constituted that he can actuate and express himself only in such a process . . . history is indeed the matrix in which human nature is realizing itself."[3] Finally, our philosophy is personalistic because its central concern is with the human person who develops in that process and progressively actualizes therein his physical, social, rational, moral potential. A personalism of this sort is not individualistic in the pejorative sense for it recognizes in man an essential social dimension and understands, as Sturzo puts it, that man cannot exist, nor develop nor live his life outside the social forms.

III

For those even causally acquainted with contemporary American educational theory no very lengthy exposition or defense of the pragmatic function of intelligence is necessary. We shall, therefore, limit ourselves here to two points—both indicating the precise area in which it would seem that the pragmatic principle of verification can be accepted by anyone and also underscoring a worthwhile intellectual attitude to which the pragmatic concern, at its deepest level, is sincere witness. For it is to the educational implications of these two points that we shall afterwards appeal.

What sort of experience most clearly manifests the practical intelligence? Were ours an absolutely fixed and immobile universe there would, of course, be nothing either to make or to do and therefore neither any need for a practical intelligence nor any way of knowing of its existence since it would never be called into exercise. So far as I know, however, once the fabled Parmenides is left

[3]Robert C. Pollock, "History is a Matrix," *Thought*, XXVI (Summer, 1951), 206–7. I am much indebted to the work of Professor Pollock for an appreciation of the significance of process—social, historical, cosmic—for this is a theme which he has brought forward with great penetration.

behind no philosopher is ever found holding for such a perfectly motionless and immutable world. Moreover, during the past hundred years men have been coming to an ever more-detailed and profound understanding of their own essential situation in a web of processes. They know themselves to be living in a universe which in its human as well as infrahuman dimensions is constantly evolving. This conviction transcends systematic divergencies and is shared by a variety of humanisms although it is made to rest on different bases in the different cases. For the Marxist it follows upon the dialectical interpretation of history; for the instrumentalist, from the universalization of the Darwinian hypothesis. For the Christian the evidences both of biological and social evolution fit into a much wider view of cosmic process whose full significance is to be grasped only in terms of a theology of history.

But at any event it is clear enough that in a moving world, men who are themselves in motion will be continually confronted with the need to deliberate and choose. A great many of these deliberations will be concerned precisely with the selection of ways and means for the appropriation of desired ends. But how shall we know whether a concrete deliberation and a concrete choice of a particular means has been sound except by noting whether in practice what we aimed at as a correct course of action actually turned out to be such? It will be generally held, I believe, on all sides—by Thomists, Marxists or experimentalists—that at least in the realm of practical judgments on concrete measures (prescinding for the moment from the ethical validity of the goal and the means) the truth of a plan of action is in its success.[4]

Some of these concrete measures are creative and pertain to the zone of things to be produced. The primitive hunter wandering through the forest wonders if a log on the bank is long enough and strong enough to bridge the stream. He tries it out and if he actually gets across his hypothesis has been confirmed. Or one can imagine the sort of task that confronts the officers of a professional education group as they plan for its annual meeting. They want to book the gathering into a hotel which will be comfortable and adequately supplied with meeting rooms while at the same time reasonable in price and convenient in location. They want a program which will allow for variety in the papers and freedom for the writers while at the same time maintaining some sort of coherent pattern and realistic standards of length. Eventually they finish the cutting and trimming, the weighing and deliberating and decide upon a particular program for a particular hotel in a particular city. This decision is a practical judgment and if, as a matter of fact, the hotel does turn out to be both agreeable and moderate and the program both flexible and instructive then the committee's judgments were good and therefore true for it is just in this happy concordance of the practical decision on means with the directive desire of the goal sought that the truth of the practical reason resides.

Somewhat similar situations are verified in certain concrete moral issues where a particular dilemma is resolved in terms of basic moral convictions ante-

[4]For a development of this theme in Thomism (where, perhaps, some would not expect to find it) see from the writings of St. Thomas Aquinas himself the Commentary on the *Nichomachean Ethics*, Book VI, lecture 2 as well as *Summa Theologica*, I, 79, 11–12; I–II, 57, 5. An excellent popular exposition will be found in Joseph D. Hassett, S.J., *et al.*, *The Philosophy of Human Knowing*, (Westminster: The Newman Press, 1954), pp. 116–123.

cedently determined. Suppose that a school administrator is persuaded that his work with young people must be built upon a relationship of friendship incarnated in an open-hearted kindness. It has become evident that one of the students who had formally responded to this attitude is now growing progressively more withdrawn and hostile and is exerting a harmful influence on the school community itself. What decision must be taken? Must the student in question be dismissed in the interests of the common good? Or if he can yet be retained, does a truly rational kindness demand that he be firmly disciplined or is there more real hope in a policy of forbearance? If the principal sincerely follows his own conscience his decision will be subjectively right but its objective truth will depend upon whether or not the course of action adopted really does best serve those imperatives of justice and love which are his master-guides.

Dewey, for one, would of course go much beyond this. For him all thought originates in necessity rather than wonder and all thinking is in some sense a problem solving. Not only would he explain in terms of its success the truth of that practical intelligence which is deployed in the ordering of concrete means to determined productive or ethical goals but he would reconstruct the whole philosophical explanation of experience from that base and dismiss whatever could not somehow be brought within this orbit. But my concern at this point is rather to advise those of an excessively rationalistic bent not to underestimate the mind's pragmatic role. If one lives in the past one may be inclined to nurture only a narrowly contemplative function of intelligence but if one lives in history one cannot ignore its operative power. For me the central intuition which is the nuclear value of the instrumentalist outlook is found in this reminder that reality is not completely disclosed by meditation—some of its facets must be approached in and through overt action—and that in any event the career of thought is indeed instrumental to the whole of human existence and loses its plenary richness if divorced from that existential context.

Once I have correctly perceived it, I do indeed know that the object across the room is a chair and there is no particular reason why I should say that this awareness is not knowledge or even that it is not useful. But I also know more about that chair when I sit in it. The example is trivial but there is another area in which the principle is enormously significant. For as Maritain has remarked the pragmatic intuition finds its fullest application in the moral order. There is a whole realm in which knowledge not completed by action is thin and unreal. Only the compassionate man, for instance, really knows what compassion is. It is no wonder that problems of human conduct were the ones that most engaged the mind and heart of John Dewey. Whenever he talks of knowledge the thought of its moral implications is not far away. Thus he observed in *Moral Principles in Education* that the whole business of the teacher is to see to it that the greatest possible number of ideas acquired by young people are so acquired as to become true motive forces of conduct. And in this he would have been understood by Emmanuel Mounier, the great French Christian Personalist, who wrote: "A thought which does not lead to a decision is an incomplete thought."[5] Not false, indeed, but incomplete.

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[5]Emmanuel Mounier, *The Character of Man*, trans. Cynthia Rowland (New York: Harper and Brothers, 1956), p. 264.

IV

The second half of the thesis I should like to maintain asserts that there is an authentic knowledge, a truth, which is not the child of practical activity and not expressed in operational formulae. Such a claim is obviously staked in highly contested territory under heavy fire from convinced experimentalists in general and positivists in particular. The latter, for instance, quite rightly suspect that to admit the possibility of meaningful propositions other than those verifiable by appeal to an activity of the bodily senses is to open the door to metaphysical and theological statements—something they most certainly do not wish to do. Conversely, a thesis like ours would be established, I suppose, if there were demonstrated the existence of a distinctive philosophical method which, while not that of the physical sciences, is still valid and even scientific in the broad sense of productive of knowledge. Instead of moving, as the physical sciences do, from explicit knowledge of one fact to explicit knowledge of another, philosophy as thus conceived would be the movement, under the intellect's own dynamism from implicit to explicit knowledge in one and the same case. But its starting point, the data from which its insights are drawn, would be experiential.

Since this whole matter of the range of intelligence is complex it is susceptible of a variety of approaches and of discussion at various levels of intensity with the temperatures varying accordingly.[6] I should like for my part here simply to underline two quite ordinary experiences which for me point inescapably to the acquisition of truth through a non-pragmatic function of intelligence. For I do not see that experiences of this sort can be adequately explained in operational terms nor yet explained away. "Non-pragmatic," does not, of course, mean "non-active" for in these experiences one is not at all intellectually passive in the sense in which the seeing eye or a spinning tape recorder are passive. The knower is dynamic but his activity is immanent rather than instrumental and its fruits are secured without manipulations. The cases proposed here are no more than fragments suggesting the line a full-scale argument might take. One is the experience of the simple insight into intelligibility and the second is the experience of weighing values against each other.

Let us take first a homely illustration of the awareness of general truths in a concrete situation. Here is a woman dividing some apples because they seem too large to give to her young children whole. But as she does so, is she not simultaneously though unreflectively aware that any whole is greater, and necessarily greater than its parts? Does she not apprehend that pattern of intelligibility

[6]Logical positivism, for instance, is controverted in E. L. Mascall's little book, *Words and Images* (New York: The Ronald Press Company, 1957). Again, the defense of a pluralism of ways of knowing has obvious links with the central position of immediate realism and for a succinct exposition of that view I cannot do better than bow to Parker's essay in the symposium, *Return to Reason*, which was mentioned in note 2, above or to R. J. Henle, S.J., *Method in Metaphysics* (Milwaukee: Marquette University Press, 1951). All these places argue that our cognitive interaction with the universe begins indeed with a sensory experience but that sense experience itself is more than the experience of sense-objects. For as Mascall puts the point: Perception is not identical with sensation but rather is "primarily an *intellectual act*, an act in which the mind utilizes the phenomenon as an *objectum quo* and passes through it to grasp the concrete trans-sensible reality, whose nature is that not of sensible but of intelligible being." *Op. cit.*, p. 121. This may strike some of us as a very dark saying indeed. But in any case I am here bypassing these basic technical discussions for two good reasons. First, because I am not competent to improve upon the expositions I have just mentioned. And secondly, because the best that even a competent person could manage in a few pages would be an epitome of a complex argument and such epitomes are likely to misrepresent a case as much as to serve it.

particularized in this existential gesture? Or take another example just as ordinary—seeing the point of a joke. After a number of press items had reported zoo experiments with simian finger-painters a wordless cartoon showed a picture gallery at the opening of a new exhibition. The walls were hung with swirling canvases and beneath one of them, center of an attentive knot of bearded men and studious women wearing heavy glasses stood the painter—a chimpanzee sporting a beret and clutching a cocktail glass. If you find it funny at all, you will do so in a glance. You will not ratiocinate, much less manipulate and if someone else fails to get the point explanations won't help much.

There are other instances, still rather common but more significant, of this meditative insight. One finds it strikingly demonstrated in the frequent intuitions of artists and scientists. In these cases the truth seized does not originate in the process of verification and its meaning is not, or need not be verifiability. A careful study of the phenomena has shown that the creative intuition does often develop while the artist or scientist is struggling with a problem but the moment of insight is itself quite distinct from the hard business of working up the rich vein of experience out of which, in a flash of vision, the truth is drawn. Generally, in fact, this intuition comes in a period of relaxation when the thinker has turned to other matters or even reports that he was doing nothing. Subsequently it may be checked in practice—if, for example, it was the key to a procedure—or objectified in the finished poem, song, or picture. But this only confirms, it does not constitute the insight which in its purest form is a moment of self-validating knowledge precisely because it is a moment of sheer understanding: one has the answer because one sees that this is the way things are and must be. Quite similar is the apprehension of meaning in the events of our own personal history. This has both its everyday manifestations and others of a highly critical sort in the course of a successful psycho-analytic therapy. A generation ago, we are told, such therapy made much of "acting-out" on the grounds that this emotional reliving in analysis of past situations was the avenue to release from neurotic forces. Since the mid-twenties, however, the accent has been on the importance of a moment of insight when the patient suddenly understands the significance of matters he has been discussing for months.[7] There may, of course, be antecedent pragmatic tentatives on the part of the analyst seeking to set up a situation in which such insight can flower but the insight itself is quite a different thing. Ordinary life presents all of us with similar experiences and indeed the instant of vision which great art often affords the beholder is not dissimilar.

The second sort of common experience to which I would appeal is that in which intelligence is found not directing action but evaluating it and proposing goals antecedently. Often enough our lives confront us with a situation of choice which must be resolved in part by appraising different aims. In Dewey's ethical theory one knows the value of an end only in relation to the means. But if this were always true we could never appreciate a value in itself, or weigh one value against another, independently of whatever means, so as to conclude that value *A* is always superior to value *B* or that *A* is a real and *B* only a pseudo-value.

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[7]For instances of insight in the course of productive work, see the three papers, "Varieties of Insight in Humans," "The Period of Frustration in Creative Endeavor," and "The Nature of Insight," by Eliot Dole Hutchinson which are reprinted in: Patrick Mullahy (ed.), *A Study of Interpersonal Relations*, (New York: Hermitage Press, 1949), pp. 386–445. For the role of similar insight in analytic therapy see: Clara Thompson with the collaboration of Patrick Mullahy, *Psychoanalysis:* Evolution and Development (London: George Allen and Unwin, 1952), p. 240.

Yet as a matter of fact we do just this with the conviction, besides, that we are dealing in aspects of truth. That is to say, we do decide that certain things are valuable whether people actually seek them or not and we do balance one line of action against another and appraise *A* as the better even though *B* may have been biologically and socially more successful.

Let us suppose that during the Korean war you had in a senior group two highly endowed young men. Both are drafted and one of them accepts the burden responsibly and goes off to die on some frozen plateau while rescuing wounded under fire. He leaves his parents a posthumous Medal of Honor to display on the piano. The other by a cunning but technically legal strategem evades the draft and lives to play his own piano and to gratify the community with charming compositions. Whose was the better choice? On a strict pragmatic reckoning (which, to be sure, many a sincere pragmatist would not be willing to follow in this case) certainly the second man's since within a purely temporal perspective it it better for the individual to be comfortably and productively alive than honorably dead. It may be objected that if everyone followed the second example the nation would be imperiled and consequently even the individual's happiness placed in jeopardy. To which our student might not unreasonably reply that not everyone is smart enough to dodge the draft; that a limited Far Eastern War is not clearly an imminent national peril and anyhow, why *should* he take considerations of patriotism and the larger context into account? What antecedent imperative is there for esteeming either one of these alternatives more than the other? Our point here, however, does not depend on which of these lines of reasoning is wisest and best. The illustration can be built up with the sides weighted in whatever way you wish. Like all illustrations it may obscure as much as it illuminates. My point is that we do, as a matter of fact, weigh one value against another before and apart from pragmatic criteria and we do decide that generous altruism is in itself better than cautious legalism; that a courageous dedication is finer than a circumscribed prudence which refuses committment. Moreover, we are able to evaluate goals apart from the means. As Brand Blanshard once suggested, the value of a beautiful mountain-top view does not itself vary because in one case you climbed by foot to see it and in the other you rode.

What these experiences all require, it would seem, is recognition of the fact that there are other than instrumental criteria of truth; that sometimes at least we do know one action to be right and another wrong; or one action to be better than another antecedent to their observed consequences. One might, indeed, argue that past experiences have provided me with a working hypothesis in favor of generosity or that the area of consequences can be so enlarged as to prove that altruism is actually always more successful than egotism. But this, I think, would take quite some proving and in any case the very attempt to do so, if carefully scrutinized, suggests a latent conviction independent of all pragmatic norms, about the superiority of what most men would call the nobler choice. None of this is to deny, of course, that disinterested knowledge can, once achieved, be employed instrumentally but only to say that the way to its acquisition is not the *via pragmatica*.

There is not a great deal of room left for indicating a few of the educational reverberations of the position sketched here. But then no great harm is done if these implications are merely suggested rather than spun out in detail for they are not particularly arcane. They are, conventionally enough, of two sorts:

those which recommend certain fundamental attitudes and others more specific. At the general level, for instance, I should say that a simultaneous and equitable insistence on both the technical and the meditative functions of man-the-thinker means a rejection of all exclusivistic, "nothing but . . ." theories. If countless people testify to the existence of a certain range of experience, there must be no discarding of large chunks of this and no forcing of them into a uniform mold. To refuse process and the possibility of the intellectual control of that process is unsatisfactory. To diminish intelligence by admitting no more than its instrumental uses is equally unsatisfactory. One should rather hold, I believe, the difficult middle way which is defined precisely by its integration and harmonization of both these functions which singly find an exclusive accent in other traditions.

Pointing up these general implications by specific cases once again calls for troublesome choice. One can select only a few instances and after our earlier comments, we feel constrained to ask what relevancy the thesis here has for important current problems even though the more conventional applications are closer at hand and obvious.

One current problem is that of the content of secondary and collegiate education in this anxious hour of scientific and technological competition with the Soviet Union. Here my first comment only echoes what has been broadcast in dozens of declarations since the fall of 1957. That is to say, if one is to acknowledge the full register of intelligence then all its possibilities must be exploited—those for historical and literary skills, for artistic effort and philosophical thinking as well as those for mathematical, scientific and technical enterprise. All one-sided educational programs fall short of the ideal although a situation of crisis may make them essential for survival. For one who maintains a dyadic function of man in his intelligent action it is as necessary to cultivate the practical as the speculative intellect. It is not a question of choosing between a contemplative attitude and an active orientation but of holding both in an organic synthesis. I do not think that the experiences of historical, philosophical and theological thinking or the appreciation, as distinct from the production of art, find their *raison d'être* in the method of hypothesis, test and check. Conversely, neither do I believe that instrumental thinking finds its fulfillment in talk. It seems a pity, therefore, that so many young Americans fail to get either from their home or their school any thorough introduction to the methods and rewards of truly creative work. The adolescent may pick it up for himself by tinkering with a car and adults with enough time and money may pitch into do-it-yourself activities. But in our schools there is, by and large, nothing even so good as what Eton is said to have. For in this English secondary school whose academic curriculum would terrify many an American collegian, there has been an honored tradition of creative extra-curriculars. These "drawing-schools" and "schools of mechanics" as they are called, provide a very sizable percentage of the student-body with some chance for serious wood and machine work; for clay-modelling and pottery-making; for painting in oils and water-colors. Apart from our technical and trade schools I am not aware that we do anything of equal caliber to an equal extent. Yet I am prepared to argue that this work-activity—which is an archetypical case of pragmatic intelligence—is profoundly humanistic. It nourishes both the individual and the social potentialities of man. It has resources of intellectual, moral and religious significance. Indeed, the concept of work can be widened to include the whole ethical endeavor to impose a noble pattern upon the stuff of

one's life. Here again, as we suggested before, the pragmatic insight is verified for here above all is it true that by their fruits you shall know them.[8]

For my second application I turn to another contemporary problem of major concern—that of segregation. I realize that this particular application is indirect and somewhat remote. Nevertheless, it is not entirely tenuous and I deliberately select this instance in preference to others of a more direct sort just because the segregation question is so current and also thus far not much attended to by American philosophies of education.

I do not think it will be denied by those acquainted with the literature, that the hard core of the Southern case for segregation is racism. Scientifically the theory is untenable but beneath the talk about the Southern way of life or the two parallel cultures or States' Rights, racism is what one finds. Now as Myrdal pointed out, racism itself arose only with the shift in the last few centuries from theological to biological thinking. One may doubt that it will ever be definitively expelled, however, just by showing that it is biologically disreputable. The whole discussion must also be joined at the philosophical and theological levels because the issue is above all a moral one and certain apologies for segregation are actually hooded in the trappings of a debased religious sentiment. It will hardly help if a segregationist is brandishing a Bible in your face to start talking about logical analysis. For history does not wait until everyone is educated to the tools of analysis. Even if it did the tools are still not enough for the job.

One who reads through the briefs for the Appellees in the cases from South Carolina and Virginia which were among the four decided on May 17, 1954, will come upon two central points in the defense of the biracial educational system. Schools are the means—to use Dewey's phrase again—of social continuity. Or as a Southern Attorney General would probably put it: they transmit the people's way of life. But the Southern way of life, one argument runs, is built on the biracial premise. Or again: the American tradition calls for state and local control of education. Therefore the Supreme Court should keep out. Now if I were to argue with a segregationist in terms of a pragmatic theory of value I think I should find myself hard pressed. You admit, I fancy him saying, that the schools are means whereby a community continues itself and its way of life. But educational biracialism is part of us and our way of life. Perhaps you feel that we should reconstruct that way of life but to do so to the extent of abolishing segregation would be to destroy community peace. On the other hand, segregation meets the criterion of social success. It keeps peace and without peace all progress is impossible. It is true that the Negro resents the situation but there are many more whites than Negroes in the South and, on the balance, which would be better: to satisfy the Negro minority or the white majority? You say that the South must consider the problem in the wider terms of the whole American *ethos* and the position of the nation in the eyes of world opinion. But *why* should it?

This could be carried much further, but the difficulty posed is sufficiently clear from what has been said. Either an end is determined by the pragmatic process of evaluation so that a course of action is right if it meets the criterion of biological or social success or the value is determined by a meditation on the very character of man in the total complexus of all his relationships, a reflection which

(*Continued on page 155*)

[8]A theme and a Scriptural phrase of which Irving Babbitt was characteristically fond for Babbitt thought of himself both as an ethical humanist and as a positivist.

LIBERAL EDUCATION: JOHN HENRY NEWMAN'S CONCEPTION

BY DWIGHT B. HEATH

WHAT ARE THE AIMS OF "LIBERAL EDUCATION"? Since the term has lately been caught up by the popular press, it has become the subject of heated controversy—a standard around which many proudly rally, and a whipping-boy which others deride as being at the root of many shortcomings of the contemporary American educational system. Before any general consensus can be achieved concerning a useful definition of liberal education, it is necessary to dispel some current misconceptions. Perhaps one of the most fruitful approaches to this problem is to review the meanings which the term has had for many outstanding educational theorists through history. In this paper, a beginning is made by analyzing the conception of liberal education enunciated by Cardinal Newman. Perhaps no single educational theorist has been so consistently maligned by journalists who take issue with a kind of "liberal education" which he himself would have found insupportable.

No one would question that John Henry, Cardinal Newman was a man of intense spiritual devotion. At the age of fifteen, he experienced an inner conversion and dedicated himself to the religious life, and soon joined the Anglican clergy. In 1833 he allied himself with the young and vital Oxford Movement ("Tractarianists," or "Puseyists"), in appealing to the authority of the undivided Church for reforms in the direction of the fervor and color of medievalism. The Movement's conception of religion was sacramentarian; it took its stand on the basis of authority. The Church was thought to be God's representative on earth, and truth to have been entrusted to her alone. Newman had no sympathy with rationalism, Protestantism, or religious liberalism, but sought rather to effect a reemphasizing of the neglected Catholic elements in the Church.

From that time until 1841, he collaborated with James Froude, John Keble, and Edward Pusey in the promulgation of ninety *Tracts for the Times*,[1] the last of which was his own argument for a Catholic interpretation of the Thirty-Nine Articles (the authoritative statement of the Anglican Church, adopted in 1562). The publication of this volume in 1841 marked the end of the first stage of the Movement, and an important crisis in his own career. The storm of protest which it aroused proved clearly that the Anglican Church had irreversibly rejected the Catholic view, so Newman was faced with the dilemma of having to surrender his logic or betray his principles. He resigned his vicarage at Oxford and went into retreat. After having undergone another intensely emotional conversion experience, he became a Roman Catholic in 1845, and was ordained a priest during the following year.

The last half of Newman's life was, in general, much less stormy than the first. He lived near Birmingham at the head of the Oratory at Egbaston. With

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[1] *Tracts for the Times* (Oxford: Oxford University Press, 1833–1841).

the singularly deep conviction of a convert, he found perfect peace and confidence in his new faith, but his relations with the Church hierarchy were not always pleasant. One of the saddest of his trials was the thwarting of an attempt to found a Catholic university in Dublin. As rector-elect of the university which he hoped to establish, Newman delivered a series of lectures in Dublin in 1852, entitled "The Scope and Nature of University Education." Since the Irish bishops failed to share some of his views, his tenure of office was brief. Nevertheless, the lectures, published as *The Idea of a University*,[2] remain today as one of the most concise statements of the liberal ideal, although Newman's conception is rather more individualistic and intellectualistic than that of some more recent educational theorists. Far from being preoccupied with common education for adjustment in a progressive open culture, he was very much a mid-Victorian gentleman frankly concerned with the cultivation of the uncommon man of "good family" and leisure whose elite status was assured in the stable stratified society he knew and loved.

In describing what he thought should be the source of such cultivation, he presented in small the idea of a university:

> "This I conceive to be the advantage of a seat of universal learning, considered as a place of education. An assemblage of learned men, zealous for their own sciences, and rivals of each other, are brought, by familiar intercourse and for the sake of intellectual peace, to adjust together the claims and relations of their respective subjects of investigation. They learn to respect, to consult, to aid each other."[3]

Such a marketplace for the stimulating interchange of ideas, he suggested, would have value not only for those "learned men," but for the relatively unsophisticated student himself.

> "Thus is created a pure and clear atmosphere of thought, which the student also breathes. . . . He profits by an intellectual tradition which is independent of particular teachers, which guides him in his choice of subjects, and duly interprets for him those which he chooses. He apprehends the great outlines of knowledge, the principles on which it rests . . . as he otherwise cannot apprehend them."[4]

Only in this "pure and clear atmosphere of thought" did Newman believe that there could be an education which might truly be called liberal; that is, one by which,

> ". . . a habit of mind is formed which lasts through life, of which the attributes are freedom, equitableness, calmness, moderation, and wisdom; or what in a former Discourse I have ventured to call a philosophical habit."[5]

The properly cultivated intellect then, in Newman's conception, is that which perceives relationships, significances, and broader meanings rather than that which has only a vast fund of disparate factual knowledge. The outcome of a liberal education is described as intellectual maturity in which the evaluation of information is not necessarily related to the superficial kind of acquaintance with diverse kinds of information which often provides only facile glibness without understanding.

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[2]John H. Newman, *The Idea of a University defined and illustrated* (London: B. M. Pickering, 1852).
[3]*Ibid.*, p. 101.
[4]*Ibid.*, p. 101.
[5]*Ibid.*, p. 102.

But, according to Newman, education is hard work:

> "Education is a high word; it is the preparation for knowledge, and the imparting of knowledge in proportion to that preparation."[6]

Following Aristotle and Cicero, he further differentiated between "liberal" and "servile" knowledge, affirming that,

> ". . . that alone is liberal knowledge which stands on its own pretensions, which is independent of sequel, expects no complement, refuses to be *informed* (as it is called) by any end . . ."[7]

In pursuing this conception of knowledge as valuable in its own sake rather than as a utilitarian means to gaining something more, he went against the current of his time in declaring that a liberal education does not aim to make men more economically secure nor more moral.

> "Liberal education, viewed in itself, is simply the cultivation of the intellect, as such, and its object is nothing more or less than intellectual excellence. . . . it is as much a real mistake to burden it with virtue or religion as with the mechanical arts."[8]

Probably the pivotal point in the failure of Newman's "Irish campaign" was this explicit denial of any moral or religious purpose in education, which distressed the bishops there. The Catholic hierarchy could not accept "intellectual excellence" in itself as a valid goal of education and they were shocked that Newman should advocate so enthusiastically this

> "Liberal Education [which] makes not the Christian, not the Catholic, but the gentleman . . ."[9]

and should concede to human frailty—

> "Philosophy, however enlightened, however profound, gives no command over the passions, no influential motives, no vivifying principles. . . . Quarry the granite rock with razors, or moor the vessel with a thread of silk; then may you hope with such keen and delicate instruments as human knowledge and human reason to contend against those giants, the passion and the pride of man."[10]

Far from being irreligious or amoral in his devotion to "intellectual excellence," Newman explained why he felt that,

> "To open the mind, to correct it, to refine it, to enable it to know, and to digest, master, rule, and use its knowledge, to give it power over its own faculties, application, flexibility, method, critical exactness, sagacity, resource, address, eloquent expression, is an object as intelligible . . . as the cultivation of virtue, while, at the same time, it is absolutely distinct from it,"[11]

in the following terms:

> "We attain to heaven by using this world well, though it is to pass away; we perfect our nature, not by undoing it, but by adding to it what is more than nature, and directing it towards aims higher than its own."[12]

Although his emphasis was primarily upon the individual, there was in Newman's philosophy some recognition of the possible social values which have since become the focal aspects in the conception of a liberal education. He conceded briefly that university training

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[6] *Ibid.*, p. 144.
[7] *Ibid.*, p. 109, italics in original.
[8] *Ibid.*, p. 120.
[9] *Ibid.*, p. 120.
[10] *Ibid.*, p. 121.
[11] *Ibid.*, p. 122.
[12] *Ibid.*, p. 123.

". . . is the art of social life, and its end is fitness for the world."[13]

It is obvious, however, that the "fitness for the world" which he valued was an adjunct of "intellectual excellence" and not an alternative to it. His idea of the university was as a vital institution with influence on the general community; his proposed system of liberal education

". . . aims at raising the intellectual tone of society, at cultivating the public mind, at purifying the national taste, at supplying true principles to popular enthusiasm and fixed aims to popular aspiration, at giving enlargement and sobriety to the ideas of the age, at facilitating the exercise of political power, and refining the intercourse of private life."[14]

Even in noting these broader implications of the liberal concept of education, it is clear that he was referring to the perfection only of a socially and intellectually elite stratum, and not to the entire national society of his time. On the contrary, he would undoubtedly have been scandalized at the suggestion that education should be a right of all, rather than the privilege of a few.

In summary, the concept of liberal education as enunciated by Cardinal Newman in his classic lectures differs in many respects from the generally accepted meaning of the term in current use. Set in biographical perspective, it is clear that his philosophy of education grew out of a strong religious conviction, and was essentially intellectualistic and individualistic. Concerned simply with the "cultivation of the intellect, as such," its sole objective was "nothing more or less than intellectual excellence." The social implications which have subsequently accrued to the term "liberal education" could hardly have been imagined by Newman.

[13] *Ibid.*, p. 176.

[14] *Ibid.*, p. 177.

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will penetrate to a grasp of at least certain values inherently excellent. Arguing from the first position I doubt that one would ever resolve the theoretical conflict although practical exigencies and the passage of time might diminish the tension and force a compromise. If, on the other hand, one could demonstrate the difference between a Negro's deprivation of a human right and a white man's deprivation of a cultural prejudice, the case might be different and a solution on the level of theory might issue in a solution on the level of practice.

But this in turn supposes that man's intelligence functions as more than a biological tool—although it is also that. It supposes an intelligence which will do justice to the facts both of process and of order without volatilizing either or reducing one to the other. In *Adventures of Ideas* Whitehead remarks that the religion which will succeed is the one "which can render clear to popular understanding some eternal greatness incarnate in the passage of temporal fact."[9] In somewhat the same fashion may we not say that a philosophy of education which will really respond to modern man's sense of totality must not interpret intellectual enterprise monistically. For it is the glory of man as thinker, I believe, that he is indeed able to relate himself to a moving world which he can both change and understand.

[9] Alfred North Whitehead, *Adventure of Ideas* (New York: Macmillan, 1933), p. 41.

DEMOCRACY AND DEMOCRATIC VALUES: THEIR STATUS IN EDUCATIONAL THEORY

BY DONALD OPPEWAL

DEMOCRACY IS RAPIDLY BECOMING, IF IT HAS NOT ALREADY BECOME, A TERM WHICH WHEN USED AUTOMATICALLY CARRIES A FREIGHT OF VALUE EQUAL TO, IF NOT GREATER THAN, THAT CARRIED TRADITIONALLY BY SUCH TERMS AS GOD, MOTHER, AND FREEDOM. It now needs only the consistent capitalization of the beginning letter, and then its status as a supreme value is assured.

As with most value terms, these very emotional overtones of automatic approval invite both confusion and charlatanism. Whenever a term such as democracy achieves such a status, there is great danger that the content of the word becomes fuzzy, and this fuzziness invites misuse because it allows the unscrupulous to pour his own content into the word without fear of refutation. Recognizing the automatic emotional support which accrues to him who uses the term, some are encouraged to use it as a device for gaining support, rather than as a vital and necessary factor in his theory. Also, quite apart from any deliberate charlatanism there is the tendency to identify one's own values with what is the best in any culture, and since democracy is by common consent a desideratum in American society, the tendency is strong to interpret one's own values so that they will be consistent with democracy. Then one pours into the term the meaning which is consistent with his own basic value schema, thus assimilating democratic values without sacrificing the centrality of other values. These two phenomena, deliberate charlatanism and pouring subjective content into a fuzzy concept, explain how it can be that Communists, Roman Catholics, pragmatists, idealists, etc. can all claim democracy as their own.

Educational theorists are no less prone than others to these tendencies, and therefore the terms "democracy" and "democratic values" appear with great frequency in much educational literature. It is a favorite for inclusion somewhere in the title of books, no matter how tenuous the connection with democratic theory. Very few theorists have dared to write a book on educational philosophy without finding some place in it for at least a mention of democracy. Some have given greater prominence to it than others and have used the adjective form with monotonous regularity throughout the exposition of the theory. They have applied it adjectivally to values, methods, activities, beliefs, and procedures, while others have simply in asides indicated approval of democracy and the school's support of it.

Since realists, experimentalists, theists, idealists, and humanists all make some sort of appeal to democracy and democratic values, and since these are competing and conflicting philosophies of life, it is no small wonder that there is some confusion over the precise meaning of democracy. One is led to conclude that either (1) there is no solid content or meaning to the term and each is free to use it as he sees fit, or (2) some writers are charlatans who twist its pure meaning to suit their own dark ends, or (3) there is a core of meaning which is the happy

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meeting ground of even the most conflicting philosophies. Although general optimism might make one hope that the third alternative reflects the true state of affairs, one should be prepared to look for evidence of the other two as well.

Although the validity of either of the first two alternatives might be established, given space enough and time, the third alternative seems to be the most suited to a single article. One way of explaining the present confused state of affairs concerning democracy in educational theory is to say that these conflicting philosophies do each support democratic values, but that some accord them different status in their theory than do others. The differences in the status consist in the amount of content which each pours into the term, and the core of meaning which is common to all the theories is the meaning with the least content. The thrust of this article will be directed toward explaining how competing and conflicting theories of education have with equal sincerity claimed agreement with democratic values simply by according them different status in the respective theories. The superiority of any one of these various uses of the concept of democracy will not be argued. Although it could be argued that they cannot all be equally valid, this article is chiefly a taxonomic analysis. It will attempt only to provide the framework for constructive discussion of the continuing problem of the most fruitful relation between democracy and education.

THREE APPROACHES

A survey of the major schools of philosophy of education indicates that there are roughly three kinds of status which different theorists have given to democratic values. According to one view they are regarded as a group of values focused on a form of government, and limited to such procedural matters as majority rule, minority rights, representation, a system of checks and balances, etc. They are then regarded as just a set of ground rules for running society, and represent a happy arrangement for the operation of society rather than a set of basic values. The educational theory then need only provide a place for the teaching of these rules and the necessary information and knowledge for the making of wise choices in elections.

Some have also regarded democratic values as a cluster of values centered in the respect for the individual, but values which are rooted in some metaphysic or conception of the good life. In this case the actual content of democratic values is openly conditioned by the supporting metaphysic, and their validity rests on the general claim for the validity of the whole philosophical system. According to this view democratic values do become a real part of educational theory, but they achieve status in it only when and only so far as they can be comfortably accomodated by the general philosophy.

A third general approach has been to make democratic values a cluster of values which make up a distinct philosophy of life, involving not only methods of adjudicating differences in public affairs but also values about the nature of man, about knowledge and its validity. This approach makes of democracy a complete blueprint for the good life. In this approach education becomes the chief means to the good life, and thus all facets of the educational enterprise are directly related to some facet of democratic values.

Each of these three approaches to democratic values will be taken up in turn, and the major schools of educational theory will be shown to fall within these three classes.

HUMANISTS, RELIGIOUS AND OTHERWISE

Educational theorists representing various kinds of humanism seem to spend the least time talking specifically about democracy and its values. They are the ones who pour the least content into the term democracy, and therefore it has little direct effect on educational theory and practice. They tend to restrict democracy to its governmental aspect. Mark Van Doren would be a good example of this school of thought which regards democracy as simply a set of values relating to governmental procedures. About the only implication for education that he states is the concept of equality in education.[1] Since all men are equal before the law, all men should have an equal chance to go to school, but apparently once there they pursue the good life and not democracy first of all. While specifically admitting that the term democracy is central to any theory of modern education, he refuses to make democracy and its values at all determinative of the good life. He says quite pointedly:

> There is no such thing as democratic morals and ideals. Morals are either bad or good.[2]

He advocates that schools just teach men to be good citizens, but does not grant that democracy could define the good citizen.

Robert M. Hutchins is another educator who represents this same school of thought. Although not all the relevant literature could be surveyed for this paper, he typically will criticize some specific idea or value which he calls a "confused notion of democracy."[3] But he rarely enlightens the reader as to what would constitute a clear notion of democracy. In at least one case he has in public defined it as a form of government, while speaking disparagingly of the "vague feeling that democracy is just a way of life."[4]

A much more articulate spokesman for this same view on the status of democratic values in educational theory is Edward A. Fitzpatrick. In his philosophy of education he states that he "aims to do for a religious humanism in education what Dewey's *Democracy and Education* did for a naturalistic education."[5] In his book he openly criticizes all those who expand the meaning of democracy beyond the political. He writes:

> It is made to serve every purpose in life that every other intellectual and moral and spiritual force presumably exists to serve. No claim is apparently too extravagant or even preposterous to make. No service is apparently too small to claim as its own. It seems to be a religion, a philosophy, a social program, an economic program, all rolled into one.[6]

He offers as his meaning for democracy the political concepts of "universal suffrage, majority rule, limited and fixed terms of public office, periodic elections." He then goes on to assert:

> These do not express substantive ideas, they do not express ends, they do not express purpose. After all, they are means. They are mere machinery.[7]

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[1] Mark Van Doren. *Liberal Education*. Henry Holt & Co. (N.Y., 1943), p. 32.
[2] *Ibid.*, p. 34.
[3] See *Higher Learning in America*, p. 13.
[4] In his "The Nature of Democracy", an address before the Faculty Forum of the YMCA at the Univ. of Ill., April 17, 1942, p. 1.
[5] Edward A. Fitzpatrick. *Philosophy of Education*. Bruce Pub. Co. (Milwaukee, 1953), Preface, p. v.
[6] *Ibid.*, p. 304.
[7] *Ibid.*, p. 305.

He seems to be saying quite specifically that whatever democratic values are, they do not define the end or goals of life. They are simply handy machinery for the operation of our society.

He then brings democracy and education together in a very unusual way by asserting that the democratic form of government is justified because it is a means of education. He explains how this can be by saying:

> In the process of performing the duties of citizenship, keeping informed so that these duties may be carried out intelligently, and carrying the social responsibility, we are educated.[8]

The actual role of the school in such a view is simply to teach the duties of a good citizen and to provide the sources of information for decision making. Educational theory as such is not touched by democracy, because it does not define the ends of education. Democracy is only a set of operating procedures within which the citizen fulfills his responsibility to others.[9]

At the Congress on Education for Democracy held at Teachers College, Columbia in 1939, Nicholas Murray Butler, then the president of Columbia expressed pretty much the same viewpoint. After acknowledging that the definitions of democracy are many and varied in content, he states one of his own. In it democracy is defined rather clearly as not prescribing a set of values which make up the good life. He said:

> Democracy I define as government by the people in the interest of all the people with guarantee of civil and religious liberty to every citizen.[10]

It is the guarantee of civil and religious liberty particularly that would seem to deny that there is any necessary view of the good life expressed in the concept of democracy. If democracy is seen as necessarily involving religious liberty, then it is no full-fledged philosophy of life. Communism, for example, cannot allow civil and religious liberty, because the values of Communism embrace all of life and leave no room for any other conflicting foundations for values.

The role of the school then, and Butler says as much, is to teach participation in this methodological process of democracy and the fulfillment of the individual's duties as citizen.

Although space prevents citing many more such sources, there is one more which reflects so clearly this whole outlook on democracy that something should be said on it. In a book entitled *Fundamentals of Democratic Education* one might reasonably expect to find some fundamental connection between democracy and education. However, one looks in vain in the Table of Contents for any systematic treatment of that relationship. In the Index one finds only a half-dozen widely scattered and indirect references to democracy, and these are in contexts other than issues in education.[11] From these two sources in the book one can assume either that the book is misnamed or that the author intended to say that the connection between the two is very slight.

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[8] *Ibid.*, p. 306.

[9] This view seems not to recognize that the choice of one set of governmental procedures over another set does inevitably involve some conception of the good life in terms of which the choice can be made.

[10] See *Education For Democracy*. Bureau of Pub., Teachers College, Columbia, (N.Y., 1939), p. 34.

[11] Robert Ulich. *Fundamentals of Democratic Education*. American Book Co. (N.Y., 1940).

It is typical of humanists, such as most of those cited above, that the basic values in life are not clearly and systematically exposed. What is clear, however, is that their educational values are not drawn primarily from the concept of democracy, and that they see no integral relationship between democracy and education.

THEISTS, REALISTS, AND IDEALISTS

There is a second group of educational theorists who pour much more content into democracy. They regard democratic values as a cluster of values centered about man's social relationships as they bear on respect for the individual. Although they are partly methodological, they also include definitions of the nature of the good life. Unlike the humanists, these theorists make a claim for the validity of these values, although the values do not stand or fall as goods in themselves. The claim for their validity rests on the claim for the validity of the general philosophy of which democratic values are seen as a part. Philosophical idealists, realists, and theists all tend to fall into this class. The following quotations and references will indicate, I think, great respect for democratic values as an integral part of the good life, but only insofar as they can be squared with and supported by a given philosophical system.

Roman Catholics are, I believe, as eager as any to assert loyal support of democratic values as they see them. However, they are also quite explicit in their insistence that whatever validity attaches to them does so because of the foundation which scholastic philosophy gives them. Since this paper is designed only to ferret out the status which various educational theorists grant to democratic values, there is no room to show their argument worked out in terms of specific values. There is room only to document their basic position on the relationship between democracy and education.

The standard Roman Catholic work on philosophy of education is quite explicit in making democratic values only a secondary objective in education. The first objective of education is "the ends for which God created the individual."[12] The status of democracy is clearly stated in the following:

> Democracy receives its *raison d'etre*, its life, its vitality, its spiritual force, solely from religion, because the freedom and the rights that constitute democracy have their origin only in God, from whom they come as free gifts to man.[13]

The Roman Catholic contributor to the previously mentioned Congress on Education for Democracy was even more explicit on this point. Very emphatically he stated:

> Let us be clear on this point; democracy does not give to a Catholic his ideals of human nature and human institutions; it is rather Catholicism which, by recognizing the inherent nature and rights of man, discovers and fosters in democracy the ideals which already belong to and flow from human nature itself.[14]

It is important to note here that this clearly implies that it is the Catholicism which fosters and is the moving force in values, and it is not democracy. The

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[12]John D. Redden & Francis A. Ryan. *A Catholic Philosophy of Education*. Bruce Publishing Co. (Milwaukee, 1956), p. 531.

[13]*Ibid.*, p. 563.

[14]Anton C. Pegis. "The Catholic Contribution: The Role of Reason in Education for Democracy", in *Education for Democracy*, p. 202.

Protestant representative at the same Congress also spoke of democracy as resting on values deeper than itself. He said:

> Democracy, both as a form of government and as a way of life, rests upon a faith—a three-fold faith: faith in the capabilities of the common man to whom the vote is entrusted and who is encouraged to think that he has equal rights. . . . ; faith in the self-evidencing power of truth, which is supposed to make its own appeal to the intelligence; faith in the universe as favorable to a social order based upon this general principal of human brotherhood.[15]

Although he did not clearly identify this "faith" upon which democracy rests, it is important to note that he did not say that democracy *was* a faith, only that it "rests upon a faith." Although many others have done so, he did not equate democracy and a way of life, for this would be to make democracy into a faith. For the Protestant the faith which underlies democracy and democratic values becomes the ground of educational theory, and democracy is accorded a place in and interpreted to fit in with the basic view of the world expressed in the faith. Democracy then is not the determinant of the educational values as much as it is one of the outcomes of values rooted in some more basic faith.

Another educational theorist who holds that democratic values are an integral part of education, and yet are valid only insofar as they are supported by some conception of the good life, represents the realist school of thought. He refuses to argue that an act is good if it is consistent with democratic tradition, and bad if not. He says:

> If we wish to defend it against other ways of life, we must do so on the grounds that it meets the claim of human nature and value better than its competitors.[16]

He thus places democratic values in a context of those that define "human nature and value." In this book educational values and democratic values are brought together by asserting that democracy consciously and explicitly acknowledges the central values of realist educational theory. Given content in terms of a realist conception of personality, these central educational values are self-determination, self-realization, and self-integration. Thus this educational theory allows a happy union of democratic values and primary educational values, but the actual content of those values is determined by the classical realism supporting them.

The leading idealist in educational theory would also seem to belong to this group in granting status only to those democratic values which can comfortably be accomodated within a philosophy of idealism. He wrote a companion volume to Dewey's *Democracy and Education*, in which he reacted to each chapter and section in Dewey's book. He interprets Dewey's chapter VII on "The Democratic Conception in Education" as setting up only two criteria for democracy. According to this idealist they are: (1) full sharing of interests within the group, and (2) free interaction between groups.[17] He calls this conception of democracy a "grand ideal", but judges its validity in the light of his idealism. He says that "it lacks, and in my judgment, needs the dynamic of a belief in God who works with man."[18] The kind of content which could be poured into democracy and

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[15]Henry Sloane Coffin. "The Religious Basis of Democracy", *Ibid.*, p. 189.
[16]Harry S. Broudy. *Building a Philosophy of Education*. Prentice-Hall, (N.Y., 1954), p. 420.
[17]Herman Harrel Horne. *A Democratic Philosophy of Education*. Macmillan,(N.Y., 1948), p. 113.
[18]*Ibid.*, p. 113.

democratic values would then be sharply limited by the kind of content which idealistic philosophy as a whole has in its value scheme.

This second group of theorists, those who claim democratic values as an integral part of their educational values, are characteristically careful in defining and limiting democratic values so that they are consistent with and supported by their philosophical systems. There is never an acceptance of value simply because it exists in the democratic tradition. In contrast to the first group who keep democracy limited to a form of government, the members of this group are generally enthusiastic supporters of democracy and give its values a vital place in their theories of education. In contrast to the third group, who make democracy a way of life, they keep their own philosophy as the most definitive force in the determination of educational theory.

PRAGMATISTS AND EXPERIMENTALISTS

The third group of educational theorists are those who continually insist that democracy is more than a form of government, and more than a cluster of values accumulated through the years. Democracy is continually referred to as a "way of life." Just as in the other two groups, these theorists acknowledge that democracy is primarily a method, but for them it is much more than just a method of making and enforcing laws, much more than a mode of operating a society through a given type of government. It is expanded into a method which arrives at warranted knowledge, a method which defines the nature of man and society. It becomes, in brief, a philosophy, a way of life. Although the philosophical categories are often missing, the answers which this method provides are comprehensive and take on the quality of answers to basic questions of knowledge and value. Although its philosophical status comes out most often simply by way of its offering alternatives to the answers offered by other philosophical systems, occasionally the statement is blunt and direct. The infrequency with which broad claims are openly made for democracy and democratic values, and the frequency with which it is only implied, makes it hard to prove by direct quotation of chapter and line.

Whether due to unguarded moments, or to a desire to be explicit, one can only surmise, but sometimes the members of this third group become very direct in claiming that democracy is a philosophical point of view. Witness the following claim that democracy is a method with given philosophical commitments:

> Democracy is essentially a process of determining the values that shall guide individual and social choices. It is an epistemological theory in operation, and when operating, becomes man's central theory, his norm of action.[19]

Dewey in *Democracy and Education* calls democracy a "mode of conjoint associated living" and sets up as criterion for democracy only the two previously mentioned values. However, at other points in other books he has been more explicit and detailed about what would constitute the acceptable method of sharing interests, and what assumptions are to govern the interaction between groups. What must be incorporated into and made determinative of the method of sharing are the "vital principles of scientific method," for "in this achievement science, education, and the democratic cause meet as one."[20] Note the sweeping notion of democracy here. Note that he has not only identified democratic values with scientific method, but he has identified education with both of them.

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[19]Max A. Carmichael. *Educational Theory*, May, 1951, p. 55.

[20]John Dewey. *Problems of Men*. Philosophical Library, (N.Y., 1946), p. 33.

He has neatly fused democracy with both a theory of learning and a theory of knowledge. This is no casual unguarded remark about the identification of democracy and education, for he then says:

> It is obvious that the relation between democracy and education is a reciprocal one, a mutual one, and vitally so. Democracy is itself an educational principle, an educational measure and policy.[21]

In his book *A Common Faith* Dewey also finds in this democratic tradition all the requirements for a full philosophy of life. He says:

> Here are all the elements for a religious faith that shall not be confined to sect, class, or race. Such a faith has always been implicitly the common faith of mankind. It remains to be made explicit and militant.[22]

Thus Dewey made democracy, as defined by him, into an all encompassing method, a method which was to be characteristic of a new religion to replace the old.

Boyd Bode continued Dewey's plea for making democracy into a full way of life. In his book appropriately entitled *Democracy as a Way of Life*, Bode urged that it become more than a simple principle of majority rule. He wanted democracy to become, like Communism, a system of ethics and economics. He wanted democracy to become, as he put it, "a comprehensive plan for the organization of both individual and collective conduct, which is essentially what is meant when we speak of a *way* of life."[23]

Although Bode did not identify this way of life explicitly with any existing school of philsophy, there is evidence that he felt there was an affinity between democracy and some schools of philosophy. In a section too long to be quoted here he asserted that democracy was congenial to relativistic rather than absolutistic systems of ethics and economics.[24]

Others have been more explicit in making democracy not only consistent with but identified with certain schools of philosophy. William Bruce, a self-confessed admirer and follower of Dewey and Bode, has been one of the more outspoken. He holds that democracy casts its lot with certain philosophical assumptions about the nature of truth, the basic structure of human nature, and the nature of intelligence. Claiming support from science he says:

> These scientific findings concerning the biological bases of human nature, the adjustiveness of habits, and the growth of intelligence through clear, sincere communication constitute a substantial foundation for a democratic creed.[25]

He then identifies this philosophy of life as experimentalism. He notes a number of similarities between democracy and experimentalism. He states them as a series of parallels between the two. Experimentalism encourages hypothesizing and sharing insights; democracy encourages group sharing and interchange. Experimentalism demands unending research; democracy demands continuous widening of interests. Experimentalism and science deny fixed goals in favor of continuous testing of hypotheses; democracy revolts against

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[21] *Ibid.*, p. 34
[22] John Dewey. *A Common Faith.* Yale Univ. Press., 1934, p. 85.
[23] Boyd Bode. *Democracy As A Way of Life.* Macmillan Co., (N.Y., 1937), p. 7.
[24] *Ibid.*, p. 7.
[25] William Bruce. *Principles of Democratic Education.* Prentice-Hall, Inc., (N.Y., 1939), p. 267.

external authority, derived from the fixed tradition of a past generation.[26] John Childs has also made much of showing that democracy and experimentalism have the same general outlooks.[27]

In this whole group of theorists, terms like democratic values, scientific inquiry, experimental method, and learning are fused into one meaning. There is thus no problem of developing educational theory as a discipline by itself, and there is no problem finding agreement between educational values and democratic values. One theory and method neatly encompasses and serves for them all. There is, for example, no need to work out a theory of learning in the school, for the method of experimental inquiry serves there as well as in the laboratory, and there is no need to make this consistent with democracy for this is already the democratic method *par excellence.*

Those in the Dewey tradition have thus made of democracy a whole way of life in its richest sense, and one that closely resembles pragmatism and experimentalism. They have poured meaning into the term, making it so rich and meaningful that it can seriously be offered as a philosophy which can rival others in its ability to define comprehensively the good life. Starting with the meaning which is shared by all educational theorists, i.e. that of a method of government, those in this tradition, begun by Dewey, have enriched it with their own theories of learning, their own theory of society, their own theory of knowledge, their own theory of value. They have explored much more richly than others have the implications for education of the mode of government called democracy. To what extent they have poured more meaning into the term than is warranted, and to what extent they have poured unwarranted kinds of meaning into the term, only a combination of analysis by philosophic and political science criteria could detect. Since this paper was designed only to discover the different statuses accorded to democracy by various theorists, no attempt will be made to pass judgment at this point.

Suffice it to say that this paper has demonstrated that pragmatism and experimentalism have in the past years very definitely thrown down a challenge to other philosophies. They have effectively woven science, democracy, human freedom, mental health, education, and many other desirable facets of human experience into a single theory. Other philosophies must rise to the occasion with some alternative syntheses, or experimentalism will indeed become what Dewey wished it to become. It will indeed become identified with and synonymous with democracy as *the* American Way of Life.

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[26] *Ibid.*, p. 303 ff.

[27] John Childs. *Education and the Philosophy of Experimentalism.* Appleton Century Co., (N.Y., 1931), p. 92.

The Women's International League for Peace and Freedom is publishing as its contribution to the John Dewey-Jane Addams Centenary a booklet, *Pan, the Logos and John Dewey, A Legend of the Green Mountains.* It includes an imaginative and penetrating myth by Professor Herbert W. Schneider, with a witty dialogue between John Dewey's two patron deities and a charming ending, and also a piece by John Dewey on Jane Addams. It is handsomely designed, hand set and printed by the Prairie Press. The booklets sell for $1.00 each, ten for eight dollars. They may be ordered from

Mrs. John H. Randall, Jr. — 15 Claremont Ave., New York 27, N. Y.

CONTEXT AND THE ANALYTIC

BY FRANK K. HOLLEY

IT HAS BEEN SAID THAT "WHAT DEWEY MEANS BY LOGIC IS SOMETHING VERY MUCH DIFFERENT FROM WHAT MOST ANYONE ELSE MEANS BY THE WORD." Underlying this statement is often the anxiety that a certain lack of emphasis in Dewey's basic theory has led to an undesirable relaxation of intellectual discipline in current education.

The purpose of this paper then will be to examine some of the features of Dewey's logical theory with the objective of pointing out the sense, and the extent, to which they are different from some of the basic features of current analytic logical theory. Representing the latter view, C. I. Lewis[1] will be taken as an outstanding example.

The motivation for this search stems from the realization that Dewey's views maintain a dominant position in professional education. To the extent that instrumentalism rests upon inadequate logical foundations, it certainly needs to be so understood by workers in the field of teacher-preparation.

To anticipate the point of the paper, the hypothesis projected here is as follows: The INSTRUMENTALIST emphasis upon "context" and the ANALYTIC development of "distinctions" can be taken as complementary rather than as opposed in any fundamental way. Instrumentalism has been suberb in pointing up the importance of the generalized theoretical context in which analytical distinctions can be more meaningfully made. On the other hand, this very concern with the inclusive view has tended to neglect the rigorous formal techniques now available as a result of analytical logical analysis. As Mr. Lewis has remarked, "There can be no adequate understanding which disregards the context of what is to be understood, but also there can be no understanding which does not analyze out factors and their inter-related functioning in this contextual transaction."

It is obvious, of course, that the vocabulary of the two approaches is different. Dewey uses the term "logic" to mean the "theory of inquiry", while for Lewis it refers to "formal proof" (justification of belief). But this difference in vocabulary certainly isn't the important thing. While Dewey apparently felt that there were substantial advantages in using the term in the broad sense, he himself has commented that perhaps much confusion could have been avoided if the term had been restricted to the formal sense of logic. This would not have changed his general theory of inquiry nor the nature of logical forms as they function within that theory.

The crucial matter then is not vocabulary. Rather, it concerns the conception of the *ultimate nature of logical forms*. To what extent is there a fundamental difference between analytic theory and instrumental theory in their respective views concerning the ultimate nature of logic? A brief summary of each theory is in order.

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[1]Lewis, C. I., *Knowledge and Valuation* (La Salle, Illinois: Open Court Pub. Co., 1946).

ANALYTIC THEORY

In analytic theory, the formal statements of logic are "analytic." That is, they represent truth which can be assured by reference to "meaning." Nothing asserted by them depends upon experience. Logical truth is knowledge of a different *kind* from empirical knowledge. It is different in *kind* because while emprical knowledge consists of what is verifiable and always requires confirmation by experience, logic and mathematics represent a type of knowledge which is apprehension "of what we are *committed* to by what we *mean*." Not all analytic statements are statements of logic, the latter being confined to those having a high degree of generality, or a particular kind of generality. For example:

"No bachelor is married."

This statement is analytic since we do not have to *investigate* to find out if, *in fact*, there is any bachelor who is married. The truth of the statement is certifiable by what we mean by "bachelor" and by "married." But statements belonging to logic are "formal" because they do not depend upon any *particular* meanings in the statements thus certified. In other words, the statement "No bachelor is married" contains the formal relation "No A is non-A." The meanings of the particular terms are irrelevant to the ground of their assurance. This is what makes logic formal. Its terms involve variables and do not depend upon any *particular* meanings of the variables. Now, the kind of meaning by which these logical rules are certified is "intensional meaning."

Intensional meaning comes down to what is called *sense meaning* (as distinquished from linguistic meaning). Sense meaning is the *criterion in mind* by which one is able to apply or refuse to apply a term. When we consider what actually a "criterion in mind" amounts to, we discover that it is characterized as a *schema*, *i.e.*, "a rule or prescribed routine and an imagined result of it which will determine applicability of the expression in question."

This "schema" of analytic theory, it seems to me, is not opposed to what Dewey means by formal rules as representing "conditions to be satisfied." If the logical analytic (e.g., the rule of "identity") is itself such a schema (more generalized), then there would seem to be no difference between the two theories as concerns the ultimate nature of logical forms.

However, analytic theory apparently means something more by a "logical form" than "a condition to be satisfied" which originates within inquiry. Logical consistency represents a "compulsion" which is just *there*—in the mind. But even then, the conception *could* be taken as similar to Dewey's meaning. Both recognize that logical necessity is, in some sense, "in the nature of things": for example, in the very fact of man's rationality, since rationality *is* the capacity to conduct controlled inquiry and "identity" is a *requirement* of controlled inquiry.

INSTRUMENTALIST THEORY

In considering Dewey's theory, it might be well to start with one of the most commonly stated criticisms. It is said to be a phenomenalistic psychology, an account of how men do think. Thus, it seems to commit the genetic fallacy by which questions of origin and temporal order are confused with questions of adequacy and validity.

But this criticism points clearly to the very feature that Dewey apparently

wants to make central to his entire approach. This most characteristic trait is the setting, or context, he supplies for the consideration of logical distinctions and principles. He insists upon the need for securing the meaning of logical operations in terms of their specific functions in the context of inquiry. Inquiry itself is seen in the context (as a phase) of experience which is not viewed as "private" but as being a "transactional" aspect of nature and natural process. Development of this conception of "transaction" in the "knowing-known" relation was presented in Dewey's final work, the book titled "Knowing and the Known."

"Mind" in this view is a biological process, and the outcome of the process is adequate to the extent that it permits a more satisfactory adaptation of organism and environment. If this sounds as if the logical operations that make such adaptation possible are taken to be arbitrary or conventional, it seems to me that Dewey would hold that such forms are in one sense "in the nature of things," and are not arbitrary or conventional. He certainly does not want to provide any ontological basis for these rules. But inquiry is objective, transactional, not "mental," and canons of logic originate as conditions that must be satisfied in case the inquiry is to be competent. When we stop to examine our own processes of thinking and talking, we examine the conditions that *need to be satisfied.* Thus inquiry has originated (and not merely grasped by mind) the formal canons of logic. For example, "identity" means the logical requirement that meanings be stable in the inquiry-continuum. Such logical behavior is "language developing in guidance of itself." It is "the control of inquiry" developing "from within inquiry." The substantiation of such a view is, of course, the major burden of Dewey's entire book, *The Theory of Inquiry.*

What has been pointed to in the above paragraph is the importance of the context in which logical forms take on their "nature" and their meaning. This context of "experience" is all important to analysis. Neglecting *context* falsifies analysis when its results are interpreted as complete in themselves apart from the context. Dewey says:[2]

> The trouble is not with analysis, but with the philosopher who ignores the context in which and for the sake of which analysis occurs. In this sense, a characteristic defect of philosophy is connected with analysis. There are a multitude of ways of committing the analytic fallacy. It is found whenever the distinction or elements that are discriminated are treated as if they were final and self-sufficient. The result is invariably some dessication and atomizing of the world in which we live or of ourselves.

And, further on the point of abstracting from context, Dewey says:[3]

> It is easy, and too usual, to convert abstraction from *specific* context into abstraction from all context whatsoever: another instance of the fallacy of unlimited extension. The fallacy is indulged in whenever the formally logical traits of organized subject matter are treated as if they were isolated from all material consideration. One of the necessary characters of subject-matter arranged for effective use is internal coherence and economy. When context is ignored this character is taken to be independent of existential material. But these formal characteristics have to do with conditions which must be fulfilled if the given scientific subject matter is to secure the maximum of applicability in further inquiry and organization.

[2]Dewey, J., *Context and Thought* (Univ. of Calif. Pub. in Phil., Vol. 12, No. 3), p. 204.
[3]*Ibid.*, p. 210.

When logical theory is placed with in this context of inquiry, logical forms become postulational. They are rules, or canons, which inquiry *must* follow if it is to be competent. They are not arbitrary because if one chooses to think he is *obliged* to proceed according to the a-priori forms of thought which have been shown by all previous inquiry to be implicit and necessary.

While Dewey has been very critical of "formal logic," he of course recognizes the essential character of this kind of discourse. Seen within the proper context, inquiry concerning its own logical conditions is formed on the ground of freedom from existential reference. It is completely abstract and formal because of its complete freedom from the conditions "imposed upon conceptual material which is framed with reference to final existential application." The forms which result are logical or mathematical because of the kind of abstraction that they are. Concerning these kinds of abstraction, Dewey says:[4]

> Change in the context of inquiry effects a change in its intent and contents. Physical conceptions differ from those of common sense. For their context is not that of use-enjoyment but is that of institution of conditions of systematic extensive inference. A further new context is provided when all reference to existential applicability is eliminated. The result is not simply a higher degree of abstractness, but a new order of abstractions, one that is instituted and controlled only by the category of abstract relationship. The necessity of transformation of meanings in discourse in order to determine warranted existential propositions provides, never-the-less, the connecting link of mathematics with the general pattern of inquiry.

These logical forms, Dewey calls "universals," and they seem to be compatible with the "formal laws" of analytic logic. He distinguishes two kinds of universals: those "framed with reference to the possibility of ultimate existential application," and those that are not so framed. He says, for example, that "the strictly mathematical phase resides in the necessary relation which propositions sustain one to another, not in their contents." In other words, they are *analytic*. But they are still instrumental in inquiry, although they are instrumental in a different way. Their function is to make transitions in discourse rather than to direct empirical analysis or state modes of action.

Conclusion

What the above paragraphs demonstrate, I think, is that instrumental logic cannot be charged with ignoring formal necessity and formal analysis. Rather, its conception of the nature of formal laws is compatible with that of analytic theory. The statement that "Dewey means something different by 'Logic' " cannot fairly imply that he has been naive about the "rationally imperative." What is different about his logic is its insistence upon a certain context in which these forms take on *functional meaning*. This certain context is the context of *experience*, where experience is conceived "transactionally." As organism-environment transaction, experience encompasses "indeterminate situations" out of which inquiry arises. "Transaction" and "indeterminate situation" are central conceptions. They cannot be neglected if full appreciation of what Dewey means by "Logic" is to be achieved.

These central terms are "omnibus" terms. They are used because Dewey wants to insist upon the "inclusive" view. In such construction, there is danger of neglecting rigorous development of necessary *directions* for guiding inquiry and providing criteria for the problem-solution. Attention to this task of developing

(*Continued on page 192*)

[4]Dewey, *Logic: The Theory of Inquiry*.

INSTITUTIONALISM *versus* ANTI-INSTITUTIONALISM IN AMERICAN EDUCATION

BY JAMES F. ROGERS

IN ANY SOCIETY THERE ARE FORCES PRESENT WHICH MAKE FOR CONSERVATION AND THOSE WHICH PRESS FOR CHANGE. With the passage of time and the concomitant events the conservative forces tend to become integral parts of the social arrangement. These structures we call institutions. Walton Hale Hamilton describes them thusly:[1]

> Institution is a verbal symbol which for want of a better describes a cluster of social usages. It connotes a way of thought or action of some prevalence and permanence, which is embedded in the habits of a group or the customs of a people. . . . They may be rigid or flexible in their structures, exacting or lenient in their demands; but alike they constitute standards of conformity from which an individual may depart only at his peril.

American education represents a cluster of institutions which in turn is but one unit of many other social, economic and political patterns. Thus, education is enmeshed in the total social fabric and cannot but be influenced by the forces present there.

At any given time there is a hierarchal arrangement of institutions in a society. That this structure is continually changing, though perhaps relatively slowly, goes without saying. Each institution is always tending toward influencing the total structure in a manner that will be favorable to it. American education has always existed in a social context wherein such forces were operative. We shall note some of those dominant forces and examine their implications for education.

Religion was the chief motivating force of seventeenth century New England. The founders had in mind a specific kind of Puritan theocracy. Church and state were but reverse sides of the same coin. A strict class structure was adhered to in church and state, they had an inherent distrust for democracy, and they sought to build an educational system to perpetuate the *status quo*.

The church did not hesitate to employ the powers of the state to enforce its will. Religious orthodoxy was upheld, heretics were banished and class distinctions and manners and morals were maintained. The skillful welding of church and state insured a social cohesiveness that has seldom been rivaled.

In many cases the schoolmasters were ministers and in other cases the local minister was expected to pass on their orthodoxy. Likewise the curriculum was religiously oriented as is attested by the moralizing of the current texts. The founding of Harvard College for the primary purpose of training the ministry in the classical tradition was in keeping with Puritan ideology.

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[1] *Encyclopaedia of the Social Sciences*, Volume 8. New York: The Macmillan Company, 1932, p. 84.

As diverse religious and national groups settled in New England they brought with them differing concepts from those which had prevailed there during the seventeenth century. The old order, too, was undergoing change. Merchant capitalists were plying the sea lanes to the West Indies and Europe and were financing the westward expansion. This ascending class would not long be satisfied with the old order.

The increasing tempo of the economic life in the colonies was buttressed by the fact that practically all of the immigration of the eighteenth century was on economic grounds. Thus the emergence of economic capitalism as the dominant force in the early eighteenth century should entail no great surprise. It had its beginnings with entrepeneurs who were primarily engaged in mercantilism in the earlier period and in industry later in the century. Beginning in the latter part of the nineteenth century it appeared as the large corporation in which form it continues.

A utilitarian type education, in contrast to the classical curriculum of the Latin grammar school, was now demanded. The private academy came into existence to offer such work as bookkeeping, navigation, surveying, commerce and mathematics.

During the early nationalist period provincialism and sectionalism were rife and the entrepeneur with his rugged individualism firmly embraced the economic doctrine of *laissez faire*.

The numerous appearances of idealistic statements regarding education were impressive, but we may not be aware that "while the Jeffersonian tradition has supplied the words and ideals, the Hamiltonian tradition of aristocracy and the spirit of business enterprise have with greater frequency governed practices."[2] Public tax-supported schools were opposed on the grounds that they were too visionary, would break down desirable social barriers and would be an unfair imposition on property owners. When the first public high school was opened in Boston in 1821, it was for the express purpose of preparing merchants and mechanics, a training that was demanded by employers. The chronicle of the half century of litigation culminating in the Kalamazoo Case of 1872–74 is a vivid reminder of how tenaciously vested interests opposed the establishment of the public secondary school system.

With the rising struggle between industry and organized labor, education was clearly in the camp of business. During the last quarter of the nineteenth century it was common for each annual meeting of the National Education Association to appeal to teachers to help in quelling strikes and in resisting radicalism of every shade. Increasing attention was given to the social sciences as a means of attaining this end.

Even such an individualist as G. Stanley Hall, in reflecting on the vast complexity of the world of business, concluded, "Its enterprise rules the world." It is little wonder that Dewey declared that, "The machine is the authentically embodied *Logos* of modern life, and the import of this fact is not diminished by any amount of dislike to it."[3]

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[2]Curti, Merle. *Social Ideas of American Educators*. New York: Charles Scribner's Sons, 1935, p. 587.

[3]Dewey, John, "Philosophy," Chapt. XIII, pp. 313–331, in Charles A. Beard, Editor, *Whither Mankind*. New York: Longmans, Green and Company, 1928, p. 317.

Business and financial interests had demanded training in commercial subjects and industry came to require schools to offer vocational training to supply their needs. The emphasis was on skills merely, a position which John Dewey attacked early in the present century on the basis that the approach was lacking in intellectual depth and gave no consideration to the social aspects of vocations.

Developments in higher education paralleled those at the secondary level. Great scientific and technological schools were established in response to economic demands.

In no manner was education more influenced by business than in the method of administration of its affairs. The autocratic approach clashed with the emerging concept of democracy in education and prompted Thayer to conclude that it results in "the conduct of education in such wise that children attend autocratically managed schools where they receive formal instruction in what is deemed essential for participation in democratic citizenship."[4]

Nothing reveals more clearly the dominance of education by economic interests than the composition of school boards. George Counts, in his penetrating study of the composition of school boards, found that proprietary, professional and managerial groups comprised 76% of the membership of city boards of education. These same groups made up 79% of the membership of boards of public colleges and universities. Counts concluded that such a condition "marks the birth of a new civilization, a civilization dominated by the interests and ideals of industry, commerce, and finance."[5] Studies before and since that time tend to support Count's findings.

During the 1920's a strong reaction occurred to the rising level of public expenditures and education did not escape. The Association for Retrenchment in Public Expenditures attacked an Ohio law of 1921 which compelled school attendance to the age of eighteen:[6]

> As it is working out in practice, it is not protecting the children or doing them any particular good, least of all making savants out of them. And it IS breeding idlers, crooks, bums and criminals.
>
> What this world needs is a great majority of mediocre people trained to be useful and happy.

With the coming of the depression a spirit of recrimination developed between business and education, a condition from which full recovery has not been made though the relationship remains strong.

In 1944 the Committee on Education of the United States Chamber of Commerce completed a study which shows clearly the close relationship between the educational and economic levels of the American people. It concludes that, "Cultural education must accompany technical training to develop the appetites

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[4]Thayer, V. T. "The School: Its Task and Its Administration," pp. 213–256, in William H. Kilpatrick, Editor, *The Educational Frontier*. New York: D. Appleton-Century Company, 1933, p. 228.

[5]Counts, George S. *The Social Composition of Boards of Education*. Chicago: University of Chicago Press, 1927, pp. 52, 57.

[6]Association for Retrenchment in Public Expenditures, *Sanctified Squander*, Bulletin No. 7, citing Bulletin No. 5 of the Association.

of the people for a better living that can come from the use of the products of American industry and agriculture."[7]

Organized labor is the most prominent faction of a more liberal element that has become of increasing influence in American culture in recent years. Labor supported the growth of the common schools in the second quarter of the nineteenth century, showing particular interest in freeing the schools from the taint of pauperism. Compulsory attendance legislation has received consistent labor support as has the prohibition of child labor.

As early as 1909 the American Federation of Labor was on record as favoring industrial education, but not at the expense of general education. This was in contrast to the position of the National Association of Manufacturers who viewed trade preparation as of primary importance.[8] Also in contrast with the more conservative position of the business community, labor has consistently favored federal participation in education.

In order to further its position labor has insisted on a new emphasis in the social sciences. Too, in recent times labor has begun to insist on representation on public school boards of all levels. More participation can be expected in the future by these more liberal forces, but the time when they will seriously challenge the dominance of business and industry in our social order seems remote at present.

These forces then, religion in the early years, the forces of economic capitalism since 1700, and more recently the rise of a more liberal element represented in part by organized labor, have become institutionalized in our society. Our current concern for moral and spiritual values in education attests to the present strength of the religious tradition in American education. Available evidence reveals without doubt the continuing dominance of education by the business community. Liberal elements are increasing their influence. These are social realities of our times with which the educational philosopher must come to grips.

These various forces have exerted an influence on education which has become cumulative rather than selective. As a result the school has become even more institutionalized than the forces bearing most directly upon it. This evident cultural lag calls for a re-examination in education.

Reconstructionists in education have launched a frontal attack on the school without having regard to the controlling forces in the social order and with even greater contempt for the historical development of the institution. George Counts bravely posed the question, *Dare the School Build a New Social Order?*, and then refuted his own proposition by admitting that the school is not the most formidable educational agency in our society.[9]

John Dewey, with his scientific problem-solving method, is oblivious to the historical and institutional nature of present culture.

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[7]Committee on Education, United States Chamber of Commerce. *Education: An Investment in People*, 1944, p. 3.

[8]Curoe, Philip R. V. *Educational Attitudes and Policies of Organized Labor in the United States*- Teachers College Contributions to Education, No. 201. New York: Bureau of Publications, Columbia University, 1926, p. 164.

[9]Counts, George S. *Dare the School Build A New Social Order?* New York: Charles Scribner's Sons, 1934, p. 23.

Theodore Brameld is the most outspoken of the reconstructionists. He rejects all absolutes. Not only is the past disregarded, but the present is passed over in favor of the future.[10]

> . . . reconstructionism looks to the future. . . . This focus on the future influences its educational formulations. "Education" will be increasingly a term describing the learning of cooperative methods for obtaining objectives upon which the widest possible majority of the people, young and old, can agree.

This social consensus represents truth and social value. "Thus social consensus is crucial to determining the educational and cultural purposes to which we should commit ourselves and to finding the means by which we can fulfill these purposes."[11]

It is abundantly clear that radical social change is the intent of the reconstructionists. The approach may unwittingly imply revolution. Lewin indicates that, "*The re-educative process has to fulfill a task which is essentially equivalent to a change in culture.*"[12]

A more realistic approach to the problem of improving our educational program would be more evolutionary and would of necessity accord consideration to the historical and institutional aspects of our culture. Regardless of the claims that can be legitimately made for the scientific approach to social problems, it will never be possible in any society to consider an institution in a vacuum. An institution is a structure and at the same time a web of relationships. Raup points to the central issue in the problem.[13]

> . . . the dynamic view of civilization and culture releases itself from static entanglements much less readily than does the dynamic view of the individual as abstracted from his cultural *milieu*. The culture changes only with wide common consent, and this comes slowly. Indeed, the very idea that man can do anything about the culture has been slow in coming.

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[10]Brameld, Theodore. *Toward A Reconstructed Philosophy of Education.* New York: The Dryden Press, 1956, pp. 165–66.

[11]*Ibid.*, p. 179.

[12]Lewin, Kurt. *Resolving Social Conflicts.* New York: Harper and Brothers, 1948, p. 59.

[13]Raup, R. B. "The New Conception of the Profession of Education," Chapt. III, pp. 73–121, in William H. Kilpatrick, Editor, *The Educational Frontier.* New York: D. Appleton-Century Company, 1933, p. 77.

AN ALPHABET OF MEANINGS FOR THE ONCOMING REVOLUTION IN MAN'S THINKING

BY STUART C. DODD

I. MAN'S COMMUNICATIONAL NEEDS ARE EXPANDING.

The title of this paper suggests that such a profound, widespread, and rapid change is taking place in mankind's symbolizing habits as to be called a revolution. But what is the evidence that the peoples of the world are embarked on such a revolution of their semiotic[1] habits—their customary inter-relatings of symbolizers, symbols and the referents symbolized?

One evidence is implied in the enormous increase in the variety and volume of the world's communicating in this century. The new mass media of movies, radio and television have been born within our lifetime and are becoming used, singly or together, in some degree by most of mankind. The variety and volume has increased manyfold for communicating in print and by mail, by telephone, telegraph and cable, by person in travel and in public speaking. In the older mass media of newsprint, magazines and books, for example, the indices measuring the variety of topics covered, the frequency of issue, the pages of print, the number of writers or number of readers all have gone up mostly by multiples of the 1900 figures in most countries around the world. Whereas the larger majority of the world's adults were illiterate in 1900, a large majority bids fair to be literate by the end of this century. Whereas most children of school age were without a school in 1900, most of them at the present rate will be in school by the close of the century.

With the world's multiplying education and mass communications, more people are probably using more vocabulary, reading and hearing more of their own language, and learning more other languages than ever before since man began to talk. Translation between languages has multiplied in press and broadcast and in simultaneous telephonic multiple translation services at international conferences. The first electronic brains for multiple bulk translating are under construction. The world seems converging towards the use of fewer languages. The League of Nations and now UNESCO have made cautious moves in studying the possibility of one auxiliary world language. Meanwhile English increases its lead in world usage, especially since World War II. It is probably known to a larger percent of the world's population than ever spoke one language before. Wherever in non-English speaking areas schools teach a second non-official language, English is rapidly becoming that chief second language in most countries, even in Russia.

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[1]Semiotics, the study of symbols (and hence most of Communicating) includes three branches, namely:

Semantics as the relations of symbols to their referents or meanings thus including most of language;

Syntactics as the relations of symbols to symbols thus including grammar, logic and mathematics;

Pragmatics as the relations of symbols and the symbolizers thus including all speech behavior and much of social psychology and aspects of sociology.

Along with this acceleration within the pragmatic branch of semiotics there is also profound, widespread, and rapid change going on in the other branches. Within semantics, the vocabularies of the world's languages are growing and changing with the vast development of the sciences and technologies. A few whole nations have already greatly changed their language within one generation. Thus Kemalist Turkey adopted the Latin alphabet and altered over half its dictionary vocabulary shifting from Arabic to old Turkish roots till city educated parents had trouble reading their children's textbooks. Thus Israel effectively revived and modernized ancient Hebrew which was not the childhood language for most of her citizens. Drastic change of the language of a people, within one generation is now possible, if sufficiently desired.

Dialects are receding around the world as newsprint and radio penetrate into jungle and desert and ocean islands. The growing international pressure for a common language has given birth to over three hundred artificial international languages such as Esperanto and Interlingua as proposed reforming of the language symbols for the myriad meanings man wants to express. Thus "Semantology,"[2] invented by an Australian, offers a new semantic system in a typewritable set of some 200 international signs which are verbalizable in anyone's own language. Intended for universal use in highway signs at first, this analytic-synthetic visual symbolism compounded out of dots and straight and curved lines has expanded to claim potential, but still undemonstrated usefulness adequate for textbooks and other literature. The new discipline of semantics is begining to get academic recognition in courses and professorships and its two professional journals.

The syntactic branch of semiotics is also changing profoundly. Thus the logic of Aristotle reigned supreme for almost two thousand years. But since Whitehead and Russell published their *Principia Mathematica* as this century began the classical logic has become but a small corner of the field of modern Symbolic Logic. Even mathematics which laymen are apt to think a highly perfected and static science has blossomed largely in this century in such branches as topology, set theory, statistics, and much more that monthly fills the mathematical journals.

The new "theory of information" seems a major "break through" in all three branches of semiotics with possibly far reaching reverberations throughout the social sciences and in the biological and physical sciences also.[3] Its units (called "bits" for binary units) are built out of the logarithms of probabilities of alternative events. "Bits" measure what has been variously described as the amount of information, or decrease of uncertainty, or complexity of organization, or negative entropy in a system. These bits and what they imply may reverse much of our current physical and metaphysical ideas about the universe tending to "run down" according to the principle of entropy. The principle of entropy expects all energy manifestations in the universe to trend towards a uniform dead level of temperature with no hotter stars or colder planets. Information theory suggests a clue to a counteraction that may be building up the universe continually. The information formula implies that random entities, whether fluxes of energy in any form, particles, molecules, mice, or men, whenever isolated, will tend to develop forms of

[2]Bliss, C. K., *International Semantography*, Vols. I–III (Sydney, Australia: 1948), Semantography Publishing Co.

[3]Quastler, Henry, *Information Theory in Psychology* (Glencoe, Ill.: Free Press, 1955), 436 pp.

"law and order."[4] In short, information theory hints at profounder explanations of how the cosmos grows and works than man has hitherto been able to conceive—partly for lack of sufficiently sensitive and powerful symbolic tools for such conceiving. (For after all, "a function of logarithms of probabilities equivalent to twin alternative events" is a highly sophisticated unit to invent.)

Some of its students therefore believe that information theory alone will justify the developments of the twentieth century being called a semiotic revolution.

But perhaps the most important semiotic change that is already well developed has been the spread of the anthropologist's view of language and all speech behavior as part of culture. It is thus seen as a stable but ever developing equilibrium of usages—a symbolic tool that is often crude, sometimes sensitive, and always improvable. It is less and less seen as something divinely ordained and unchangeable with its varieties fixed ever since the Tower of Babel. Hence the peoples of the world seem more ready than ever before for the profound, widespread, and rapid changes in the development, structure, and functioning of all language which we call the semiotic revolution.

II. MAN'S LANGUAGE NEEDS MATCHING EXPANSION.

If one grants that man's communicating is undergoing an almost explosive expansion in this century, our next thesis is that languages in general are lagging in development. Our symbolic tools are not matching the growth of our need for better tools.

To gauge this lag requires a standard for comparison. We propose a threefold standard composed of three criteria. These criteria expect a good symbolic system (1) to have the minimum number of symbols, (2) to cover the maximum of meanings, and (3) with maximum exactness, i.e., with a constant one-to-one correspondence between symbol and referent.

Fewness of symbols means a parsimonious or economical system. It means least cost or least effort in talking or writing. It means logical and mathematical elegance as when those disciplines seek to build their sub-systems using the fewest possible number of primitive terms and postulates.

By this standard of parsimony our languages are well below par. The world has hundreds of languages (or thousands if more finely sub-classified) whereas the ideal for maximizing efficiency of intercommunicating would be just one world language. Furthermore within each language there are many unnecessary symbols from useless synonyms to unpronounced spellings. Information engineers estimate in terms of "bits" that about half of language in use is redundant. Putting all these together, it seems to us likely that mankind could express all the meanings now expressed in language with perhaps one percent of the world's present number of written and spoken symbols. This estimate implies that ninety nine percent of the world's symbols are now unnecessary and are increasingly becoming wasteful of human energy.

Fullness of coverage of whatever man wants to communicate now or in the future is our second criterion for a good symbolic system for the world. This

[4]Dodd, Stuart C., "The Reiteration Rule." *Synthese*, Vol. XI, No. 1, March, 1959; Dodd, Stuart C., "How Random Interacting Organizes a Population," (to appear).

standard seems to us to be currently better met. For we have little difficulty in developing new words and enlarging our dictionaries as man's experience expands especially in scientific technologies. Our alphabets can spell and our vocal apparatus can speak many times as many words as in our largest dictionaries. So there is ample room in which to grow.

One lack here however, is the lack of standardization or multiplicity of ways for forming new words. Standard rules for the growth of language would avoid much waste and ambiguity such as is now incurred when using old words with partially new meanings. Another lack of coverage is the part of experience (including imagination) which is not currently expressible in language. We have no words for many nuances of fragrances and other sensations. We cannot yet talk about the hitherto undistinguished abstractions of philosophy as these abstractions must be symbolized to become knowable. We cannot yet describe in words all the complexities of many organizations, systems, and societal situations, etc. Many of us in the social sciences believe we lack adequate mathematics (or any other symbolism) for dealing exactly with "patterns" or complex configurations of *all* that happens in a community in one year for example.

Fixity of one-to-one relationship between symbol and referent, or constancy of meaning is our third standard for language. All current languages except perhaps logic and mathematics fall far short of this standard. (Though even in mathematical nomenclature there are relics of old ambiguities such as "one billion" meaning a thousand millions in America and a million millions in England.)

This standard is violated by every word that has multiple meanings in the dictionary as well as by every usage that is ambiguous, vague, or variable in meaning. An ideal language would have symbols each with just one constant referent which would not vary with speaker or hearer, with time or place, with purpose or context. The meaning of each symbol should be constant no matter who says what, when or where, why or how. This ideal includes, of course, having specific words for variables, for vague referents, and for partly unknown referents whenever one wants to communicate with variability, or vagueness, or state the speaker's ignorance. (A good language should include projective terms that invite and help the hearer supply his own private meanings as in Lewis Carroll's "Jabber Wocky" whenever one wishes to communicate any such projective freedom.)

In sum, the symbols of current languages are neither few, nor full in coverage, nor fixed in meaning. Modern languages are deficient by all three criteria. And these deficiencies, we argue, will become aggravated as the explosive expansion of human communication unfolds in this century. What then can be done towards closing this gap? Can the structure of language be re-tooled to keep pace with its ever-growing social functions? Can man's symbols, largely developed in the age of ox carts, be streamlined somehow for the jet propelled thinking of the future?

III. AN ALPHABET OF MEANINGS CAN EXPAND LANGUAGE WELL.

To streamline language by making its symbols "few, full, and fixed" and so able to cope with man's rising flood of communicating, we re-propose developing an *alphabet of meanings*. This alphabet would seek to analyze into a small number all the meanings, all the referents or objects of thought, that man may think or say,

now or ever in time to come. Syntheses of those few elements would then restore any of the original set of meanings and also yield almost unlimited numbers of new combinations, for expressing meanings man has never thought of as yet. Thus our present phonetic alphabet by analyzing the sounds of a given oral language into a small number of elements is able not only to synthesize the millions of words in current languages, but could synthesize further sounds in hundreds of millions of further new words if wanted in the future.

This analytic-synthetic plan of attack has proven very practical and highly creative throughout semiotics and other sciences. Chemists have analyzed all substances into some hundred atomic elements which recombine to yield all those substances plus all the newly created marvels of chemistry. Military administrators analyzed all the diverse role-actions of men in the armed forces so fully that they were able to synthesize tens of millions of men in powerful military organizations in World War II. Mathematicians and logicians develop their sciences by analyzing out ever more basic primitive terms, postulates, and operating rules by combining which they creatively develop their growing semiotic sciences. Linguists, less thoroughly, have analyzed language, as in Basic English, down to a thousand most useful words (out of the million or more available in standard English) and then combined them to publish the Bible, for example, as a synthesis of those thousand linguistic elements.

But our proposal to develop an alphabet of meanings goes far beyond any current analysis in any semiotic science. It goes beyond the analyses of logic and mathematics in extending to all of a language and to all languages. It goes beyond the analytic or artificial languages like Esperanto, Ido, Romanol, Lingua Franca, Integlossr, Interlingua, etc., and of simplified national languages like Basic English[5] and Model English[6] in that our proposal starts where they leave off. They analyze words down to current roots and affixes in some existing languages and regularize their recombinations. Our proposal starts from those roots and affixes and analyzes them into a much smaller number of elements. *At present just ten elements of meaning seems adequate to do at least half the job.* In achieving such a small alphabet, we believe our proposal goes beyond Leibnitz project for such an algebra in his *New Essays Concerning Human Understanding* though our proposal is essentially his dream.

Before exhibiting in the next section our proposal and the "alphabet of connective meanings" we have invented as a starter, let us look at a bit of arithmetic which explores the possibility of carrying the task through before we begin it.

At about this point some readers have remarked "This is a fantastic proposal—as if one could count in advance all the thinkable thoughts of mankind." To this we note that men similarly thought it fantastic to number the stars in the sky, or the hairs of one's head, or the sands of the sea. But as science developed techniques, such unenumerable mysteries proved reducable to finite counts within operationally specified limits.

So we specify here an upper limit and ask: What is the maximum number

[5]Ogden, C. K., *The General Basic English Dictionary*, W. W. Norton & Co., 1942, 441 pp.

[6]See Dodd, "Model English," *General Semantics Bulletin*, No. 10, Summer, 1952; and "Model English," Ch. 10 in Locke and Booth, *Machine Translation of Languages* (New York: John Wiley & Sons, 1955).

of meanings mankind can deal with in the next thousand years? This is reducable to: "How many thoughts are thinkable by a person in one year?" Let us start by defining "a thought" as an instance of "a meaning" occurring in one person's nervous system. In other words we translate "a meaning" into behavior, a finite flux of neural activity. However unobservable this may be at present, we can compute certain consequences from this definition such as the upper limit we seek. For one property of every neural flux or pulse of activity is that it requires a finite interval of time in which to flow. For nerve currents travel at finite speeds ranging up to 125 meters per second in men. This time interval furnishes an operational unit for measuring the number of thinkable thoughts per second. So we next define, as a start, the unit of duration of "a thought" arbitrarily as a hundredth of a second. This seems a plausible top speed since no person can typewrite, speak, or read one hundred words a second, for example. Information engineers estimate that the ablest minds tested to date cannot handle over fifty "bits" of information per second. (If this definition of a unit thought's time interval as one hundredth of a second is objected to by anyone, he is welcome to choose either a full second or a ten thousandths of a second instead. This factor of a 100 either way will make no appreciable difference in our argument.)

At a rate of 100 "thoughts" per second a person could think at most 3,153,600,000 "thoughts" a year ($=100 \times 60 \times 60 \times 24 \times 365$). Multiply this by the world's population of around two and a half billion people—and quadruple it to allow for population growth a while ahead ($=10^{10}$ people).

The annual number of "thoughts" in the next thousand years would yield $3.1536 \times 10^9 \times 10^{10} \times 10^3$ or under 32 sextillion ($=10^{21}$) thinkable thoughts at most. This is certainly a maximal number or "ceiling" as it expects everyone to think 100 different thoughts a second, day and night all his lifetime. This also assumes that every "thought" of every person is unique. But, of course, most of a person's neural activity is highly repetitive and most people's thinking has enormous numbers of thoughts common to other people. Thus every cultural act, every word one speaks is a repetition of other persons' previous acts and speakings. So we may take this largish number of thirty two sextillion as a safe upper limit for the number of meanings mankind could symbolize at most in a thousand years. It may well be a million million ($=\times 10^{12}$) times larger than the actual number of humanity's thoughts in the next millenium. So sextillions give us an ample margin.

Now a littl algebra of combinations shows how small a set of elements can yield that number of combinations. Let us figure that the elements of meaning could be twice combined like letters into words and words into sentences. Let us limit these "words" to not more than ten elements of meaning and their "sentences" to not more than seven such "words." This seems equivalent to easy diction in English such as most twelve year olds would understand. *Then just ten elements of meaning is enough to yield sextillions of such "sentence" combinations.* For ten elements yields 2^{10} or 1024 *different* combinations or "words" without even considering any permutations or repetitions of elements. Then the 1024 "words" taken up to seven at a time in "sentences" yield more than 32 sextillions of different combinations. This exceeds the maximum number of thinkable "thoughts" estimated above as of the order of sextillions. And by merely allowing up to ten "words" in a "sentence", ten elements of meaning can yield billions of those sextillions of combinations.

Thus we are assured that an alphabet of meanings with as few as ten elements

is theoretically ample to express all the meanings mankind can possibly express in a thousand years.

Now that we know that ten elements are theoretically enough to do the job, the question becomes can a particular set of ten elements be discovered or invented that can actually do it? Can a ten element alphabet of meanings be exhibited? Can advance specifying of a desirable semiotic invention lead to deliberate inventing of it? That is what the next Section IV starts out to do.

IV. AN EMBRYO ALPHABET CAN NOW BE EXHIBITED.

Our argument that all mankind's thinkable thoughts can be expressed as compounds of a few elements of meaning, or unit symbols for all possible referents, needs clinching by exhibiting a set of elements that promise to do the job. Let us therefore look at our embryo interlanguage called "Tilp" which was invented to explore this reductive possibility.[7]

Tilp is a set of ten elementary meanings. They were chosen from extensive trials to be a "most useful" set in that their combinations yield about half of human speech as described below. They are a small enough set to be symbolized by ten letters, or by the ten digits, or by the ten fingers, or by any other decad of visible, audible, or otherwise sensable sign vehicles. We use ten carefully chosen letters in order to make Tilp both a writable and speakable language. For by including a meaningless letter, e, for euphonic purposes the ten lettered-meanings of Table 1 can be strung together in pronouncable compounds. These compounds are built up as the equivalent of current words in any language (as illustrated in the sample dictionary Table 2). The rules for combining these ten elements and comprising the grammar of Tilp are also exhibited (Table 3) followed by an example of a prose paragraph paraphrasing the Lord's Prayer (Table 4).

The ten "dimensional" elements of meaning offered in Tilp are tabulated in Table 1. Each letter-element has two submeanings denoted by its position as a prefix or postfix (attached to e or to any letter-element). The ten are subclassified in three "levels" as qualitative elements, quantitative elements and relational elements. These levels are Kant's "categories" stemming from Aristotle's set of ten categories. They are symbolized by exponents of 0, 1, and 2 respectively[8] in our dimensional analysis of human behavior. They subclassify respectively the universe of all concepts or meanings on the basis of *form* into kinds, degrees, or relations of whatever *content* may be denoted.

Within the qualitative level, Tilp has standardized four subcategories namely "space" and "time" as universal to all the sciences and to all existence; "people" as the most distinctive and observable subcategory for the human behavioral sciences; and "all else" as the complementary class (i.e., all not time, space or people). This residual category of content is to be further subclassified, of course, as far as possible or needed to describe anything in any situation at issue. Meanwhile it serves as a guarantee that our symbolic system is a perfectly closed system since by definition there can be no concept, no symbol whatever, that is outside our system. It also serves as a convenient handle to deal with everything whether currently known or unknown,[9] symbolized or symbolizable.

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[7]Dodd, *Systematic Social Science* (offset) (Seattle, Wash.: University Bookstore, 1947); Dodd, "A Logical Interlanguage," *Forum*, Palestine, September 1943; and Dodd, "Tilp—a ten letter alphebet of meanings," *General Semantics Bulletin*, Nos. 6–7, Spring-Summer, 1951.

[8]Dodd, *Dimensions of Society* (New York: MacMillan, 1942); and *Systematic Social Science*, *op. cit.*

TABLE 1

TILP'S 10 ELEMENTS AS AN EMBRYO ALPHABET OF MEANINGS—"TILP ONDEK ZER"

4 qualitative elements	4 quantitative elements	2 relational elements
t = time	o = negation	z = relative amount
t− = an instant	o− = "not," denial, zero	z− = less (than)
−t = a period	−o = "anti-," minus	−z = more (than)
l = space	n = 1	r = relative direction
1− = a point	n− = first	r− = to
−1 = a length	−n = one	−r = from
p = people	d = 2	e = euphonic base letter without meaning
p− = a person	d− = second	
−p = a plurel	−d = two	
i = "all else" (not t,1,p)	k = 3	
i− = a factor, an adjective	k− = third	
−i = a product a noun	−k = three	

The quantitative level in Tilp uses four elements (although only two, 0 and 1, are essential and although, on the other hand, all ten digits are often convenient). These four elements are "negation" (=0), "one" (=n), "two" (=d), and "three" (=k) each with twin subelements as noted in Table 1. The relational level in Tilp uses two elements dealing with relative amounts (=z) as "less" and "more" and with relative direction (=r) as "to" and "from."[10]

With this (or any other) set of elements of meaning, rules are needed for combining them. The algebra of sets provides such rules. Chiefly the rule for forming a product of two sets (called their "intersect") is involved. By it, any element of meaning may be "multiplied by" any element, forming what may be variously described as an "association" or "joint occurrence" or "combined meaning" or "logical product" or "pair relation" or "conjunction." This is symbolized by juxtaposing the letters as in any algebraic product. Thus the English word "some" is "oz" in Tilp which is formed as a product or joint meaning of its two elements "o−" for "none" and "−z" for "more than" yielding "some" as "more than none."

For other examples of word building by forming logical products or pair relations of elements note how the personal pronouns may be derived. Since "n−" stands for "first" and "−p" stands for people or persons their product including the euphonic factor, e, is "nep" meaning "first persons" or "we." By including the factor "−n" for "one" the singular of the first personal pronoun "I," is the product "nepen." Similarly for the second persons, "dep" meaning "you" is built as the product or joint occurrence of "d−" for "second" and "−p" for "persons." In the same way, "kep" and "kepen" from "k−" standing for "third" mean "they" and "he (or she)".

[9]For standard subclasses of this first residual class we have used (Ref. 8, 9): *action* (=a) to include all human behavior especially speech behavior; *values* (=v) or "desiderata" to include whatever men want, i.e., try to get or keep; "*circumstances*" (=c) to include as second residuals all not t, 1, p, a, or v. These six qualitative elements of meaning (which we refer to as "Telpvac") will prove a more versatile and powerful set than the four elements hitherto used in "Tilp."

[10]For fuller details on these ten elements and on the dimensional analysis of behavior from which they are derived as dimensions of speech behavior the reader can consult: *Dimensions of Society*, *op. cit.*; *Systematic Social Science*, *op. cit.*; "Tilp—a ten letter alphabet of meanings," *op. cit.*; and Dodd, "The Reiteration Rule," *op. cit.*

The singular and the plural numbers simply call for the factor "−n" (or "en" if alone) for "one" and "−nz" (or "enz" if alone) for "more than one." The comparative of any adjective or adverb is denoted by "iz" which combines "i−" (="something") and "−z" (=more than). The superlative reduplicates the comparative by saying "iziz" for "most" meaning "more than more" as children and some languages say it.

The three tenses of any verb illustrates well how compound meanings can be synthesized from analytic elements. Thus "−t" stands for a time interval (see Table 1) and this identifies verbs since every action requires a time factor. Then since "o−" denotes "zero," the product "ot" means literally "zero time" or a mathematical point in time. This can assert existence of anything at any instant of time as does one meaning of the copula "is" in English. So "ot"="is," the copula in the present tense. Then the past tense "was," can be derived by prefixing "z−"standing for "less (of time) than the present instant." So "zot"= "was." Then the future tense asserts "more (of time) than the present instant" by inserting "−z" to get "ozt" as meaning "will be." Finally any verb can add "zot," "ot" or "ozt" to denote respectively its past, present, or future tense.

These glimpses of word buildings in Tilp may open into a larger vista in the little "dictionary" that is presented in Table 2.[11]

[11] *Systematic Social Science, op. cit.*

TABLE 2

THE 16 OPERATORS AND 84 CONNECTIVES OF BASIC ENGLISH

Basic English Operator	Dimensional formula (i.e. word in "TILP" dimensional language*)	Phrase explaining the formula
be	ot	zero (o−) duration (−t), existing at any instant
do	et	pure verb or act (−t), made pronounceable by the euphonic vowel, (e)
let	oet	zero (o−) acting (et), do nothing, not act
make	it	a thing (i) acts (−t); also, acting on a thing
come	relet	moves (let) towards (re) [a point (1−) acts (et), i.e. moves], e.g. 'A comes to B' means 'A moves toward B'
go	erlet	moves (let) from (er), i.e. 'A goes' means 'A moves from (wherever A was)'
get	relit	moves a thing (lit) to (re), i.e. 'A gets X' means 'A moves X to (himself)' or 'to his own possession'
give	erlit	moves a thing (lit) from (er), i.e. 'A gives B to C' means 'A moves B from A's possession to C's possession'
take	replit	moves a thing (lit) to (re) a person (p), i.e. ('A takes X' means 'A moves X to A'
put	erplit	moves a thing (lit) from (er) a person (p), i.e. 'A puts X away'
send	preplit*	a person (p−), to (re) a person (p−), moves a thing (lit)
have	irot	of, from a thing, part of, possessed by (ir), opposite (−o) of verb (−t), i.e. passive reversed to active voice; possesses. Thus English may phrase it: 'I have ears'
keep	irozt	will (−ozt) have (ir−); since: ot=be, or present tense, i.e. zero duration; z−ot=was, or past tense, i.e. less than the present date; ozt=will be, future tense, i.e. more than the present date
see	oculot	eye (oculo) acting (−t), i.e. 'eyeing' in colloquial English
seem	oculotro	be seen (ro) [i.e. to the opposite; makes active verbs passive]
say	linget	tongue (ling) acting (−t)

TABLE 2 — Continued

Basic English Connective	Dimensional formula (i.e. word in "TILP" dimensional language*)	Phrase explaining the formula
a	en	one
about	ool	all (oo) lines −1) sides
after	toz	a date (t−) and some [time] (oz)
again	det	second (de) time (−t)
against	ro	opposite (−o) relation (r)
all	oo	opposite (−o) of none (o−)
almost	zoo	less than (z) all (oo)
among	rer	to (re) and from (−r) relations
and	tir	of (ir) one date (t−), at the same time, simultaneously
any	en	one
as	zizo	all not (−o) less (z−) nor more than (−z) a thing (i)
at	le	a spot
be	ot	zero (o−) time (−t), present moment, present acting
because	irt	acting from a thing
before	neloz	first (ne) line (−1) [i.e. front-and-back] positive (oz) [i.e. front]
before	zote	less than (zo) a date (te)
between	rer	among, to and from
but	zet	lessening, making (it) less (z−), excepting
by	per	from a person
down	kelzo	third (ke) line (−1) [i.e. up-and-down] negative (zo) [i.e. less than (z−) zero (0)]
east	geodeloz	second (de) line (−1) [i.e. right-and-left] positive or more than (−z) zero (0) [i.e. right] earth (geo); geodeloz = rightward on earth (facing north as conventional norm)
enough	proiz	not (o−) more (−iz) to (r−) a person (p−)
even	irikel	third line (kel) [i.e. up-and-down] and to and from a thing (iri) [i.e. even up to]
ever	oot	all (oo) times (−t)
every	oon	all (oo) ones (−n)
far	ezl	more (−z) distance (−1)
for	ri	to (r−) something (i)
forward	reneloz	towards (re) first dimension (nel) positive (oz)
from	er	(−r); primitive element
he, they	kep	third (ke) persons (−p) [kepen = he; kepz = they]
here	lezil	this (zil) spot (le)
how	inet	the (in) doing (et)
I, we	nep	first (ne) persons (−p) [nepen = I; nepz = we]
if	ez	is greater than, includes, is implied by, i.e. 'A ez B' means 'A if B' or 'if B then A' or 'A includes B' or 'B is part of A', etc.
in	lele	at (le) a spot (le)
little	zi	less (z−) thing (−i)
may	oit	not (o−) making (it) [i.e. permitting, letting]
much	iz	more (−z) things (i)
near	zel	less (z−) distance (−1)
no	oe	denial (o−), zero; primitive element
north	geoneloz	positive (oz) on first dimension (nel) on earth (geo)

*These dimensions are a minimum set which has been found necessary as far as explored to date by the writer, for the data, concepts, and principles of the social sciences, the physical sciences, and the semantic sciences (logic, mathematics, linguistics) for the top level of classes. Further subclassifying splits up 'things' into as many subdimensions as needed (such as 'oculo' and 'ling' above). How much further subclassifying will be needed is still unknown, of course.

TABLE 2—Continued

Basic English Connective	Dimensional formula (i.c. word in "TILP" dimensional language*)	Phrase explaining the formula
not	o	by definition as primitive element
now	tzil	this (zil) moment (t—)
of	ir	from (—r) a thing (i)
off	ler	from (—r) a spot (le)
on	oler	not (o—) off (ler)
only	enen	one, one
or	ezt	greater, make more than, add
other	ozil	not (o—) this (zil)
out	lelo	opposite to (—o) in (lel)
over	kelozle	up (keloz) spot (le)
please	otiprit	be (ot) desiring (iprit); person (p—) acts (—t) towards (r—) something (—i) [i.e. strives towards, or desires]; the adjective (i—) or participle of the verb 'prit'=desires
so	izlel	that (izl) distance (el)
some	oz	more than (—z) zero (o—)
south	geonelzo	earth's (geo) first dimension (nel) negative (zo) [i.e. longitude line]
still	izotot	was (zot) and is (ot) property (i—), existed and existent now
such	irizli	or (ir) that (izl) class (—i), that kind of
than	ere	relation, from (er) and to (re)
that	izl	more (—z) distant (—1) thing (i)
the	in	one (—n) thing (i)
then	tizl	that (izl) date (t—)
there	lizl	that (izl) spot (l—)
this	zil	less (z—) distant (—l) thing (i)
though	zet (or ez)	but (zit); if (ez)
through	releler	to (re) in (lel —) from (er)
till	reten	to (re) one (—n) time (t)
to	re	(r—); primitive element
together	len	with (len)
tomorrow	eniz eten	one (en) more (iz) day (eten) [i.e. one (en) period (et)]
under	kelzole	a point (le) below (kelzo) [i.e. the third dimension, (kel) negative (zo)]
up	keloz	third (ke) dimension (—1), positive (oz)
very	iziz	most [i.e. more (iz) more than (iz)]
well	priz	a more (—z) thing (i) to (r—) a person (p—); approval
west	geodelzo	earth's (geo) second (de) dimension (—l), negative part (zo) [i.e. left when facing north]
what	ini	the (in) thing (i)
when	tin	the (in) moment of time (t—)
where	lin	the (in) place (l—)
while	int	the (in) duration of time (—t)
who	pin	the (in) person (p—)
why	erin	from (er) the (in); *rizozti* for past or future thing, cause or purpose
will	ozt	acting (—t) in a future period (ozt) [i.e. positive (oz) period (—t)]
with	len	one (en) spot (le), at (le) one (en)
yes	ei	a thing (—i) [asserted]
yesterday	zen eten	less (z—) one (en) day (eten)
you	dep	second (de) persons (—p) [depen=you, singular; depz=you, plural]

Table 2 gives the Tilp word (with a brief suggestion of its derivation) for each of the hundred "connective" words of Basic English. "Connective" words here include all verbs or "operators," pronouns, prepositions, conjunctions and adverbs and adjectives of time, place, person and number. "Connective" words contrast with "substantive" words such as most nouns naming things predominately and most adjectives naming qualities. Table 2 evidences that all the connective words of Basic English can be expressed in terms of the ten Tilp elements of meaning.

The details of Table 2 are not important here. Many of them will be refined with linguistic research. As the author is a sociologist and not a linguist, no claim is made that Table 2 is a finished product. It is rather a suggestive beginning—which strongly argues that such analytic speech is possible. Further research should continually discover better elements of meaning which subsume more meanings. Tilp should evolve. A step in this semantic evolution is the evidence from Table 2–4 that many meanings—the connective half or so of all current language—can now be reduced to a few elements of meaning.

The examples of word compounding in Table 2 have also illustrated the next level of combining whereby grammatical rules tell how to combine words into sentences. These rules relate words to words. They fix the word order in sentences such as the sequence used in Tilp, namely: "subject—verb—object—indirect object—with all further modifiers following the modified term." The rules of grammar dealing with case and number, person and comparison, tense and voice and mood are all summed up for Tilp in the ten exceptionless rules stated in Table 3.

TABLE 3

GRAMMAR COMPLETE IN TEN RULES

1. *Inflections* are eliminated. Sentences comprise invariant roots and particles only, i.e., entities and relators.
2. *Modifiers* follow the modified.
3. *Case* is expressed by prepositions and the word order: Subject, verb, object; e.g., possessive, of, =ir; indirect object, to, =re.
4. *Number* is indefinite, although en=one=singular, −z=more=plural.
5. *Person* occurs in three persons only; nep=first person, [I, we]; dep=second person [you (singular), you (plural)] kep=third person [he, she, they].
6. *Comparison* is by more: more=iz; most=iziz.
7. *Tense*

	Past	*Present*	*Future*	*Verb sign*	Perfect=zo: e.g., 'I will have gone' = nep erlet zo otz
	z−	o	−z	−t	
Copula	zot	ot	otz	et	
	=was	=is	=will be		

8. *Voice* Inverter, ro, makes a verb passive. E.g., 'He was hit' = kep hit zot*ro*.
9. *Mood*, etc. a. Imperatives use et. 'Stop!' = Stop et.
   b. Conditionals (subjunctive) use *ez*. ez='if'.
   c. Participles use adjective sign *i*−. it='being'.
   d. Infinitives use noun sign −*i*. ti='to be'.
10. *Interrogation* inverts subject and verb. E.g., 'Did he come?' = Relet kep zot?

To conclude this exhibit of Tilp, an example of it when fully compounded into a prose paragraph may be studied. Table 4 presents such an embryo synthesis in the case of the Lord's Prayer. Its seventy words are wholly built out of just thirteen elements of meaning—nine of Tilp's ten standard elements and four substantive elements ("s" for "symbol," "m" for "male," "geo" for "the Earth"

and "stom" for "stomach"). This is a mere suggestion that this analytic procedure can be extended to the realm of substantive words and reduce whole prose passages to a few elements of meaning.[12]

TABLE 4

THE LORD'S PRAYER EXPRESSED BY TILP IN 13 ELEMENTS OF MEANING
A SAMPLE DIMENSIONAL ANALYSIS OF A PARAGRAPH OF SPEECH BEHAVIOR, B

Read across→

Dimensional categories→	the *Acts* (verbs)	of *People* (actors & actees)	in *Time*	and *Space*	for *Values* (wants)	under *Circumstances*	with connectives (operators)	*Tilp* translation
Algebraic version—B=	A^a;	P_p ;	T^t ;	L^l ;	V^v ;	C^o ;		
Interrogative version—	What is done?	By and towhom?	When?	Where?	Why?	How?		
Tilp letters	—t	p	t	l	ri	o, n, d	r, z	
(Read across→ each line in succession)		Father					in	Melenzep ıele
				heaven			of	loopot ir
		us,						nepz,
	let					name	of	oet sir ir
		you						dep
	be kept				holy.			iroztro ezez ipritro.
	Let				kingdom		of	Oet geodl pezez ir
		you						dep
	come.							relet.
	Let				desire		of	Oet priti ir
		you						dep
	be done						on	etro oler
				earth			as	geo zizo
							in	lele
				heaven.				loopot.
	Give				bread		to	Erlit stompriti re

[12]To prevent collision of letter symbols some convention will be needed. Letter groups such as "geo" and "stom" here might be enclosed in quotes to flag them as a Tilp unit of meaning and not their ordinary English meaning if any.

TABLE 4 — Continued

Tilp letters	—t	p	t	l	ri	o, n, d	r, z	
		us	this day				and	nepz zil eten, tir
	make	us			debtless			it nepz oreerliti
							as	zizo
		we						nepz
	make	debtors					of	it preerlitz in
		us			debtless			nepz oreerliti
							and	tir
	let	us					not	Oet nepz
	be put						into	oerplitro let
						tests,	and	etoeti, tir
	keep	us					from	irozt nepz er
					evil		because	pirti irt
							to	re
		you						dep
	is				the kingdom			otingeodl pezez
					the power		and	in oozetezti, tir
					the glory			in sezez
			forever					oot

Ten standard Tilp elements→	4 qualitative elements:	4 quantitative elements:	2 relational elements:	+4 substantive elements added as needed here:
	Time = t	Zero = 0, not, etc.	Relative amount = z	Symbol = s
	Space = l	One = n	less = z−, more = −z	Male = m
	People = p	Two = d	Relative direction = r	Earth = geo
	Things = i	Three = k	to = r−, from = −r	Stomach = stom
	(all else)		(Euphonic vowel = e)	

For Fuller statement, see: Dodd, S. C. "Tilp—A Ten-Letter Alphabet of Meanings," *op. cit.*

The ten-element version of Tilp sketched in Table 4 may be readily extended. One extension to numerals would assign six further letters for the digits 4 thru 9. Then all ordinal and cardinal numbers, multiples and fractions, powers and roots, and many other mathematical concepts become neatly expressible in Tilp terms. Another extension would be to add useful substantive elements. Of these, we believe, a first useful sextet would be "a" for "act," "v" for "value," "s" for "symbol," "m" for "material," "f" for "female" and "d" for "difference." How many substantive elements and what specific ones would be sufficient for logical analysis of all our present vocabularly (or any specified part of it) is a matter for

much further semantic research. Perhaps a comprehensive system of classification such as the Dewey decimal system used in library cataloguing may help.[13] We believe that about a hundred elements of substantive meaning would be enough to express ninety five percent or so of what people daily communicate. Research would continually discover more useful abstractions or elements of greater and greater coverage and so reduce the size of the world's substantive alphabet of meanings.

V. WHAT MAY BE ITS COSTS AND CONSEQUENCES?

With this structure of Tilp in mind as an alphabet of meanings in embryonic stage, let us try to evaluate some of its limitations and possibilities. What might be the chief social costs and consequences of developing Tilp, or any equivalent alphabet, for thinking?

We see as the chief semantic cost, the research needed to develop Tilp to cover the substantive half of language. At present it covers the connective half of language completely and has suggestive but unexplored possibilities for helping to analyze the substantive half. The "connective tissue" of language includes here all connective words as specified above, plus all grammatical inflections or parts of words. This connective tissue by small sample counts we made in twelve European and Asiatic languages seems to outnumber the substantive words or roots both in oral and in written speech. So this connective tissue apparently includes half or more of the meanings ordinarily conveyed in oral or written speech. The fact that the connective tissue of Basic English (Tables 2, 3, and 4) is entirely translatable into Tilp and that the Bible has been published in Basic English is some evidence that the ten elements in Tilp can express at least half of what is said in the Bible.

The further fact that the substantive part of the Lord's Prayer was reduced to Tilp with a few added elements is strengthening evidence of its possibilities in the substantive area.

A second major cost would be in drastically changing our speech habits—in any giving up of the familiar and well-loved circumlocutions we grew up with. This social cost can be reduced by the four techniques of making at least this part of the semiotic revolution (1) gradual, (2) voluntary, (3) advantageous and (4) desired. Consider each technique.

Any adopting of an alphabet of meanings should come *gradually* even to educating with progressive completeness a second and a third generation. First extensive research is needed, then extensive publicity about it, then increasing use for scientific purposes spreading to other uses and to more users as fast or slowly, as fully or slightly, as communicators wished. This gradual adoption can be quite different from the change by erosion whereby languages have evolved in the past. Such shift in spoken usage can be slowed down by standards published

[13]Of course a mechanical device involving no analysis is possible whereby every meaning of every word in the largest dictionary is given a number. Less than ten million numbers would probably be used, we guess. This requires only the permutations and combinations allowing repetitions of the ten digits taken not more than eight at a time. Thus with Tilp-like "words" which never exceeded eight letter-elements, one could name, without any economizing analysis such as this paper proposes, all the meanings man now expresses in words. But this requires the arbitrary learning of millions of bonds or names-for-referents whereas our alphabet cuts down this learning to a few dozen bonds.

in dictionaries and enforced nowadays by the mass media. Academies, etc., could recommend or adopt new elements of meaning according as these appeared and survived criticism and proved superior by agreed upon criteria.

Use of a "semantic alphabet" or "analytic speech" should be *voluntary*, increasing only if users preferred to use it. It could coexist with other languages just as mathematics coexists with folk speech each being used in spheres where it worked best. It is not an exclusive reform and may even prosper better in the long run if other current improvements and reforms precede it. Thus developing international languages like Esperanto, Interlingua or Model English[14] may well be a desirable intermediate stage. Wherever groups had to choose en bloc as when all engineers in their schooling have to learn some mathematical language the usual large majority can be required for such decisions, followed up with a bilingual transition period for learning the new habits.

Any increased use of an alphabet of meanings (when better developed) would be because of obvious and immediate *advantages* to the users. Its use could grow, not by fiat nor organized pressures, but by sheer general perception that one could communicate thereby more precisely, and more flexibly, more comprehensively, yet more simply, more creatively yet with greater ease than was previously dreamed possible. Thus sheer intrinsic advantages diffused our Arabic-Hindu digit system displacing the clumsy Roman numerals even in spite of legislative resistance.[15]

The social pain involved in changing habits can be largely prevented by developing strong public *desires* for the new habits. Then the transition is welcomed and considered pleasant. Thus Israel's complete change of language for most of her inhabitants within a generation shows how effectively such a change can be made when strongly desired.

Balanced against the social costs of providing for semiotic research and of changing one's speech habits, the possible gains should be estimated.

The first major consequence we foresee from analytic speech would be an enormous economy in human effort. If our estimate above that the present volume of communicating in the world could be done with something like one percent of our present symbolism to be learned, we would have saved some 99% of such effort. Reading and writing could be as painlessly and automatically learned before most children were six as their oral speech is now learned by mere exposure to such stimuli in the family. Think how many hours a child spends now in grade school learning to spell the vast volume of half haphazard irregular permutations of the twenty six letters in our irregularly phonetic alphabet. With regular spellings or grammar or idioms, and with a vocabulary that expressed what one meant swiftly and surely a large part of school effort to teach the tool subjects could be economized and diverted to other educational needs. As more youth go to college and prolong their education well on into their twenties, the modern need increases for a semiotic reform that could greatly shorten (and also improve) the whole educational process for everyone. Alphabets of meaning and analytic thinking from infancy might allow young people to marry and start their families and their careers when nature has matured them, physically and

[14]"Model English," *op. cit.*

[15]Medieval Marseilles passed a decree forbidding merchants to use ciphers (a name for something non-existent!) and enjoining them thereafter to figure "in plain and clear Roman letters." Imagine today figuring one's change from CXVIII dollars for purchasing LXXXVIII items at XVC cents each!

mentally, nearer to their coming of legal age as citizens. A shortening of schooling by four years (which we believe a conservative forecast) resulting from analytic speech, if eventually universalized to the world's population of two and a half billion people, could mean releasing for social purposes the extra productive power of ten billion man-years per generation. Figuring a life expectancy of some sixty years, this could mean adding to humanity *every year* the productive power of a population equal in size to that of the United States today.

That analytic speech could reduce schooling markedly is suggested by a simple test of learning time. Experiments in learning Tilp showed its extreme ease due to the parsimony and regularity of its ten-letter alphabet and its ten simple rules of grammar. Thus a one-page summary of Tilp and a vocabulary sheet was given to five college students who had never heard of it previously. We also gave them standardized paragraphs of 200 words to be translated into English from Tilp (with English substantives)—a different paragraph on each of five successive days. These students were able to translate correctly within a half hour using this Tilp semilanguage. Their speed quadrupled between the first and the fifth 200-word paragraph. What other language can be so swiftly mastered?

To this economy in schooling should be added the vast economy in daily talking or listening at which people spend an ever-increasing fraction of their waking lifetime. For we believe that compared with current speech, analytic speech will say more with less wordage and with consequent less time and effort.[16] How large this saving may be is difficult to estimate in its present early stage of development. We see most of our present speech as lumbering along like a creaking oxcart, little improved in basic structure for several thousand years. We further see our future speech as streaking between communicators almost effortlessly like the frictionless electrons in electronic "brains," perhaps within a century from now.

Another large source of reduction in man's efforts needed to satisfy his wants (especially his mental and spiritual wants) may result in the mass media. Suppose analytic speech and the analytic thinking it manufactures were eventually to reduce wordage by one half (for a speculative guess) without reducing the volume of meanings communicated. Such reduced wordage would reduce some of the costs and effort in writing, typewriting, and printing, in broadcasting, public speaking and sermons, and in every agency for transmitting or preserving human speech.

Lest such estimates of reduced effort seem overly fantastic the reader should recall that we are not dealing with tinkering improvements in language but with revolutionary reorganizing. We are dealing with shifts from hundreds of thousands of mental bonds between symbols and referents to a few score of such basic bonds. This is a reduction not down to fifty percent or so of present neural patterns but more on the order of a reduction down to one percent of one percent. This revolutionary economy is comparable to the shift in writing from many thousands of Chinese-like characters down to a score or so of letters. To learn to write all the Chinese ideograms requires most of a lifetime whereas to learn to write modern

[16] A communications engineer reading this manuscript noted that while speech is about 50% redundant, this redundancy is useful in assuring perception in spite of auditory and semantic "noise." We agree that redundancy can be useful but the present somewhat random redundancy could be replaced by more efficiently controlled redundancy which Tilp could produce by simply repeating statements—as Air Control Towers now do.

phonetically-spelled Turkish is almost immediate to a Turkish speaking person upon merely learning the shapes and sounds of the letters of his Latin alphabet.

The second major consequence we foresee from analytic speech would be an enormous improvement in human communicating and thinking.

In support of the last statement one could argue that an alphabet of meanings should make language more versatile, efficient, precise, creative, etc., etc., but instead of arguing over adjectives, we propose scientific testing by controlled experiments. Let the agreement-compelling power of crucial tests of exactly stated hypothese be applied to evaluate Tilp as a scientific theory in the semiotic sciences.

For this experimental evaluation we propose twenty-four criteria. Each criterion can be stated as an hypothesis that Tilp, when tested under rigorously controlled conditions, will show statistically significant superiority on appropriate indices compared with any other language or languages. Then according as the experiments on human populations may lead to acceptance or rejection or doubt of the hypothesis, the world could judge and decide what to do about Tilp on the basis of verifiable scientific fact and not on argument and propaganda.

The twenty-four criteria, listed in Table 5[17] are each a percentage-like index for measuring some dimension of excellence of any scientific theory or symbolic system. Since each index measures the excellence of a symbolic system (such as Tilp) in some respect we call it a "system-metric." Each system-metric can be experimentally determined for a given scientific theory or symbolic system at issue. If given sufficient resources we could now set up controlled experiments to compare Tilp scientifically with any other language by these twenty-four criteria which include the scientists' most trusted tests of truth. Such evaluative research seems to us essential (in addition to the developmental research on elements of substantive meaning described above) before even considering any official "adoption" of an alphabet of meanings.

A final consequence we foresee from an alphabet of meanings or analytic speech as it might be called, is to help accelerate the mental and spiritual evolution of mankind. For we see man's biological evolution as going on slowly over the centuries while his cultural evolution, paced by his symbolic systems, gathers momentum faster with each decade in this century. Our mental and spiritual development are highly dependent upon language and their symbols for their communication, growth, and preservation.

Consequently we believe that an alphabet of meaning, perhaps developed from Tilp, could revolutionize human speech and thinking and thereby significantly accelerate man's cultural evolving.[18]

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[17]See also, Dodd, "Introducing 'System-metrics' for Evaluating Symbolic Systems—24 Criteria for the Excellence of Scientific Theories," (to appear).

[18]For further reference, see Dodd, "The Transact Model Evaluated—by 24 'system-metrics' or measured criteria," (to appear); and Dodd, "The Transact Model—a predictive and testable theory of social action," *Sociometry*, Vol. XVIII, No. 4, December 1955.

[17]These 24 criteria supersede the less comprehensive set of ten indices in Dodd, "On Measuring Languages," *Journal of American Statistical Association*, Vol. 44, March, 1949. The latter were designed more restrictedly to measure the familiarity and the regularity of candidate international languages. In the case of Tilp its three indices of familiarity to the world's population would be zero and its seven indices of regularity would all be 100%. The 24 more discriminating system-metric indices would range, we believe, from 0 to 100% for Tilp.

TABLE 5

24 "SYSTEM-METRIC" INDICES

FOR EVALUATING ANY SCIENTIFIC THEORY OR SYMBOLIC SYSTEM[17]

CRITERIA			8 "TYPE-PARTS" of any transact or act-in-full-context
SYNTACTIC (relating Symbols to symbols)	PRAGMATIC (relating symbols to symbolizers)	SEMANTIC (relating symbols to referents)	
Consistency	Reliability	Verifiability	Acts
Acquaintancy	Popularity	Standardizability	by People
Recurrency	Durativity	Stability	in Time
Parsimony	Density	Translatability	and Space
Importancy	Predictivity	Controlability	for Values
Accuracy	Generality	Univocability	with Symbols
Efficacy	Simplicity	Durability	and Materials
Synergy	Utility	Multipliability	and Other Context

These 24 criteria (="M°_{24}") for the excellence of scientific theories or symbolic systems are derivable as a Cartesian product of the set of 3 semiotic relations (=the columns="R°_{3}") times the set of 8 type-parts of any transact (=the rows="X°_{8}"). Thus $M^{\circ}_{24} \overset{def}{=} R^{\circ}_{3} X^{\circ}_{8}$=the matrix of 24 "system-metrics." Each system-metric is an operationally-defined percentage-like index measuring one criterion. (See Ref. 11).

CONTEXT AND THE ANALYTIC

(*Continued from page 169*

the normative distinctions of justification and validity has been the great contribution of analytic theory.

In conclusion, then, instrumentalist theory needs to sharpen its conceptions and eliminate ambiguities by means of better utilization of the rigorous developments of formal analysis. On the other hand, contextualist theory has much to offer in the way of providing safeguards against restricting dichotomies. Questions raised for the formal logician are:

1. How do you provide for the active relation between the analytic and the empirical which you take to be two distinct *kinds* of knowledge?
2. Is there not theoretical advantage in having a generalized theory in which analytic knowledge and empirical knowledge are united into one common system—which shows and emphasizes their inter-relations?
3. Does not an assertion, to be warranted, depend upon both of these "kinds of knowledge" in full interdependence?

Questions raised for the instrumentalist are:

1. What "rational imperatives" can you distinguish and elaborate for guiding the inquiry process to a solution?
2. What *particular* directives can you provide for proceeding to solve, as contrasted with proceeding to "muddle," the problem?
3. What marks the end-state as a *solution*?

As complementary processes of analysis, Instrumentalist Theory and Analytic Theory (represented here by Dewey and by Lewis) promise to provide the needed synthesis for dealing with such questions. Proper emphasis can be placed upon *both*: Context and the Analytic.

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